

FirstGlimpseMag.com

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Connected Blu-ray
Disc Player p. 9



HOME THEATER

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Since 1979, Sandhills Publishing has produced publications covering technology beginning with the introduction of *Processor*. Over the years, the company has developed a complete line of computing publications, encompassing *Smart Computing*, *PC Today*, *Computer Power User*, and *First Glimpse*.

Our plain-english approach has served audiences well for 30 years, ensuring they receive accurate and unbiased technology information to meet their needs.





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On Our Cover: Featured on this month's cover is Mitsubishi's WD-82837 Home Theater HDTV (\$4,999; www.mitsubishi-tv.com), Insignia's Advanced Series NS-WBRDVD Connected BD player (www.insigniaproducts.com), Brother's MFC-255cw Wireless Inkjet Multi-Function Center (\$99.99; www.brother-usa.com), and SanDisk's slotRadio cards (\$49.99 each; www.slotradio.com).

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The Latest Arrivals

Look For These New Products

Keep an eye out for these products hitting Best Buy shelves for the first time. Some of the items listed below are showcased in this month's one-page product profiles, so be sure to take a look at the listed page numbers for more information.

Home Theater

Insignia Advanced Series
Connected Blu-ray Disc Player
■ **See page 9**

Insignia Advanced Series LCD
HDTVs

IOGEAR Wireless USB Audio/
Video Kit

Mitsubishi's WD-82837 Home
Theater HDTV
■ **See page 8**

Sony Bravia KDL-40VE5 LCD TV
■ **See page 23**

Digital Imaging

Insignia NS-DSC10 Camera

Computers

Asus CM5570-AP002 Desktop

Brother MFC-255cw Wireless
Inkjet All-In-One Printer
■ **See page 51**

Compaq Burst 110c-1040dx
Netbook

Dell Burst im10-010B Netbook

Dell i545s-004B Desktop

Dell im10-008B Netbook

E Machines ET1810-01 Desktop

Epson Stylus NX515
All-In-One Printer

Gateway LT3103u Netbook

Gateway SX2800-01 Desktop

GeForce 9800 GT 1GB
EcoIntelligence Graphics Card

HP P6110y Desktop

HP 110-1025dx Netbook

HP 110-1045dx Netbook

Toshiba mini Notebook
205-n311/w

Portable Devices

CradlePoint CTR350 3G Mobile
Broadband Travel Router

SanDisk slotRadio Cards
■ **See page 62**

Zoombak Universal GPS Locator

Game Titles

• **July 7 •**

The Bigs 2

• **July 14 •**

NCAA Football 10

• **July 21 •**

G-Force

• **July 26 •**

Wii Sports Resort

• **August 14 •**

Madden NFL 10

Movie & TV Releases

• **August 4 to 10 •**

"Flight Of The Conchords:
Complete Second Season" DVD

"Love Boat: Season Two" DVD

"My Cousin Vinny" BD

"Obsessed" DVD & BD

"Project Runway: The Complete
Fourth Season" DVD

"Race To Witch Mountain"
DVD & BD

"Sid The Science Kid: Change
Happens" DVD

"The Backyardigans: Singing
Sensation!" DVD

"The Soloist" DVD & BD

"Ulysses" DVD

• **August 11 to 17 •**

"90210: First Season" DVD

"Baby Einstein: Baby Neptune"
DVD

"Designing Women: Complete
Second Season" DVD

"Gigantic" DVD

"I Love You Man" DVD & BD

"Michael Jackson: The Trial &
Triumph Of The King Of Pop"
DVD

"Mistral's Daughter" DVD

"Scooby Doo: Double Feature"
DVD

"St. Elmo's Fire" BD

"Teenage Mutant Ninja Turtles
Film Collection" DVD

• **August 18 to 24 •**

"Dexter: The Third Season" DVD
& BD

"Ghost Adventures: Season 1"
DVD

"Greek: Chapter Three" DVD

"Gossip Girl: Complete Second
Season" DVD

"Hannah Montana:
The Movie" DVD

"How To Lose A Guy
In 10 Days" BD

"Pete's Dragon" DVD

"Simpsons: Season 12" DVD

"Smurfs 2" DVD

"The Last Starfighter" BD

Music Releases

• **August 4 to 10 •**

"Faith+Hope+Love" Hillsongs

"Fearless" Dean Phillips &
Craig Phillips

"Felt" Anchor & Braille

"G.I. Joe" Original Soundtrack

"Gloriana" Gloriana

"I Get Around" K'Jon

"Kidz Bop 16" Kidz Bop Kids

"No One's First & You're Next"
Modest Mouse

"Slide On Over Here" Steve Azar

"True Love" Jessy J

"Unspoiled By Progress"
Walter Trout

• **August 11 to 17 •**

"Bright Nights, Dark Days" Cavo

"Evangelion" Behemoth

"Follow" Johnny Cooper

"Hot Mess" Cobra Starship

"In Love & War" Amerie

"Justin Moore" Justin Moore

"Mood Muzik 1" Joe Budden

"The Here And The Now"
Sam & Ruby

"The Lost Get Found" Britt Nicole

"The Wild Places" Dan Fogelberg

"Twang" George Strait

• **August 18 to 24 •**

"Armistice" Mute Math

"Evacuate The Dance Floor"
Cascada

"Futuristic Leland" Yung L.A.

"Imperial Blaze" Sean Paul

"Jump Back: The Best Of The
Rolling Stones" The Rolling Stones

"Keep On Loving You"
Reba McEntire

"Phases & Stages" Willie Nelson

"Speak Love" Courtney Fortune

"Sugar Red Drive" Sugar Red Drive

"Turn Me Loose" Ledisi

"Ursa Major" Third Eye Blind



ce news

COMPILED BY ANDREW LEIBMAN

Mobiles & Local Searches: Like Peas In A Pod

According to a new study from comScore, the number of people using mobile devices to find local information (via applications, mobile browsers, or SMS) grew 51% over the past year.

The study also found that 20.7 million people used a mobile browser to access local information such as online directories, restaurants, maps, and movies, which is a 34% increase over a year ago. But the real boost to local search came from downloaded applications, which experienced an 83% growth compared to last year. SMS was also used to deliver local content 72% more often than in 2008. Regarding the types of content people were looking up, there was a 73% increase in online directory searches, 70% in restaurant searches, 63% in maps, and 60% in movies.



Used Games Coming To Best Buy?

In a bid to attract cost-conscious gamers, Best Buy has begun exchanging and selling used games through kiosks in a handful of Dallas and Austin stores. Users can insert used games into the kiosk, which then scans the game to make sure it works and then prints out a voucher redeemable for a Best Buy gift card, which

customers can use for another game or anything else in the store. Best Buy's Chief Marketing Officer, Barry Judge, said on his blog that some of the kiosks are capable of renting out games and movies, as well.



Female Gamers On The Rise

The NPD Group recently announced the findings of its Gamer Segmentation 2009 study, which shows that the female gaming audience is growing significantly in 2009. The NPD Group surveyed 20,000 members of its online consumer panel and classified them into seven gamer segments, including console, secondary, online PC, avid PC, offline PC, heavy portable, and extreme gamers. The console gamer segment saw the biggest jump in female gamers—up by 5% to 28% compared to last year's results. Heavy portable and extreme gamers also got a shot of estrogen with a 4% rise in both categories.

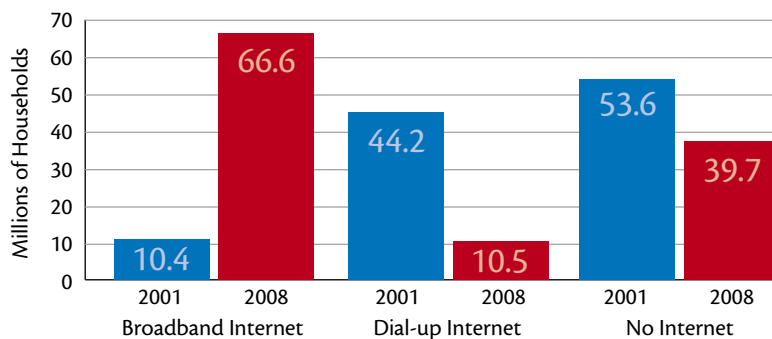


m a r k e t p l a c e

Broadband Explosion

In July, the Internet Innovation Alliance, which is made up of nonprofits and companies focused on universal broadband deployment, reported there was a six-fold increase in broadband adoption between 2001 and 2008. That works out to 66.6 million households with broadband in 2008 compared to just 10.4 million in 2001. If you think that's impressive, consider that faster Internet access resulted in \$32 billion in consumer benefits in categories varying from health care and higher learning to leisure pursuits and more. The report also found that dial-up connections had dropped from 44.2 million households in 2001 to 10.5 million in 2008, and the number of homes with no Internet decreased from 53.6 million to 39.7 in the same period.

Broadband Up; Dial-Up Down

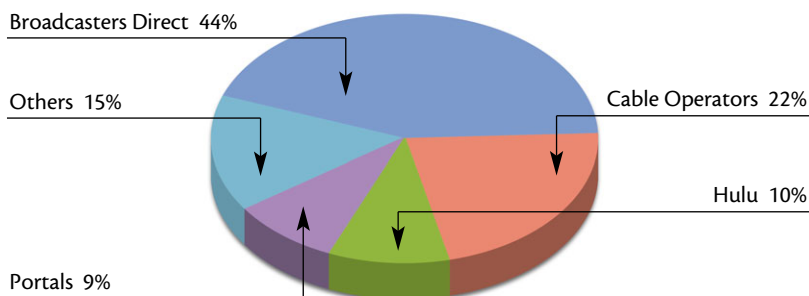


Source: Broadcasting Cable

Who Knew? TV Can Make Money Online

According to the industry analyst firm Screen Digest, major U.S. TV broadcasters including ABC, CBS, NBC, FOX, and Hulu (NBC Universal, News Corp., and Disney/ABC) were responsible for a combined 53% of the \$448 million in ad revenue generated from online Web-based TV services in 2008. The remaining money makers in ad-supported Web-based TV include the online video services from major sports leagues, traditional online portals, other broadcasters, and content owners.

2008 Ad-supported Online TV Revenues

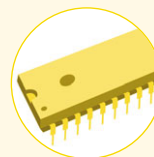


Source: Screen Digest

tidbits

A quarterly review of the U. S. prepaid wireless industry reveals that folks are checking into prepaid wireless Web sites at unprecedented levels. The combined visitation to wireless sites from VirginMobileUSA.com, TracFone.com, MetroPCS.com, MyCricket.com, Boost-Mobile.com, and Net10.com grew 37% compared to a year ago.

Source: comScore



According to the Semiconductor Equipment Association of Japan, sales of equipment used to make microprocessors (integrated circuits used in CE devices) jumped for the third month in a row, a sign that manufacturers could be gearing up for a recovery. Sales rose by 22% in May to \$326 million.

Source: Reuters

A recent survey by The NPD Group shows people misunderstand the difference between netbooks and notebooks: 60% of netbook purchasers said they believe netbooks and notebooks offer roughly the same capabilities. As a result, only 58% of people who purchased a netbook rather than a notebook said they were very satisfied compared to the 70% satisfaction rate reported by people who said they planned to buy a netbook from the outset.



Source: The NPD Group



LCD TV panel makers are quickly moving to double frame rate (120Hz) and quadruple frame rate (240Hz) LCD TV panels in a bid to attract customers and improve image quality across the board.

Source: DisplaySearch

Mitsubishi WD-82837
\$4,999
www.mitsubishi-tv.com

Mitsubishi's WD-82837 Home Theater HDTV

The Greenest, Smartest Big-Screen



Consider home theater in the most exciting sense of the term: a gorgeous, high-definition, widescreen picture that seems as immense as a cinema projection screen. Whether you're of a mind to be bowled over by big-scale entertainment, or you simply want an HDTV that won't look out of place in a large rec room, the Mitsubishi WD-82837 (\$4,999; www.mitsubishi-tv.com) brings it.

If an 82-inch diagonal screen sounds like it would be an extravagant purchase, you're in for a surprise. Although the WD-82837's impressively long list of Mitsubishi optimizations is state of the art, its underlying Texas Instruments technology supplies proven performance at a price LEDs, LCDs, and plasmas can't touch. (That is, if you can even find a flat-panel TV of this size.)

Speaking of costs, most of us are spending our dollars a lot more wisely these days. You might be aware that certain types of

HDTVs, such as plasmas, have a reputation for being power-hungry. Not only do they draw more house current, they emit more heat—and that means your air conditioner has to work that much harder to keep your house cool in the summer months. That's a one-two punch that can knock your electrical bill for a loop.

With a Mitsubishi Home Theater HDTV, you'll get full-color movies and shows with a decidedly green twist. The WD-82837's Energy Star 3.0 rating assures you that it sips power instead of guzzling it. In other words, it continues to save you money even after you bring it home. In fact, for the upfront cost of a family trip to Disney World, you can enjoy the ultimate in "stay-cationing" for years and years, right in your own living room.

If you're wondering what the trade-off is when you choose the least expensive, most environmentally friendly option among big-screen HDTVs, don't worry: It isn't picture quality. With the WD-82837, Mitsubishi has checked every box on your family videophile's wish list.

The Full HD resolution of Mitsubishi's fifth-generation Plush1080p video processing reveals every detail Blu-ray Discs and high-def TV have to offer. Meanwhile, the WD-82837's Smooth 120 technology ensures that moving objects on the screen have sharp edges with clear definition. Add in support for 36-bit Deep Color, Mitsubishi's Dark Detailer contrast enhancement, and proprietary six-color processing, and your Monday Night Football guests will never believe you didn't spend thousands more.

Last, but not least, this Home Theater HDTV is ready for the 3D revolution. Kids and dads agree that this is quite possibly the coolest development since the invention of surround sound. With 3D-enabled computer games and special third-party glasses (not included), your crew will be right in the middle of the action.

Along with its 73- and 65-inch siblings, the Mitsubishi WD-82837 makes a compelling case for giving your home theater the big-screen treatment. **PG**

Insignia NS-WBRDVD
Blu-ray Disc Player
www.insigniaproducts.com

Insignia's Advanced Series Connected Blu-ray Disc Player

Enhance Your HD Movie Experience

Style and innovation aren't mutually exclusive, especially when it comes to the performance and look of home-theater components. The Insignia Advanced Series Connected Blu-ray Disc Player (www.insigniaproducts.com) will be available in September, and it fuses these features with wireless connectivity to generate a more enjoyable home-theater experience.

Though you only need a moment to notice the sleek exterior of the NS-WBRDVD, it's the disc player's features that will keep you coming back for a vibrant hi-def experience. With next-level entertainment specifications, the NS-WBRDVD supports Dolby TrueHD and DTS-HD Master Audio as well as Blu-ray Profile 2.0 to produce clear audio and images. Moreover, you'll be able to play numerous disc formats due to the NS-WBRDVD's compatibility with DVD, DVD±R/RW, CD, and CD-R/RW, in addition to BD-R/RE and BD.

Not only will the NS-WBRDVD provide full HD 1080p output resolution for

Blu-ray Discs, it will also upconvert your standard-definition DVDs up to 1080i resolution. This is the best way to watch the substantial DVD collection you've accumulated over the years in HD.

Stay Connected . . . Without Wires

What is it about the Insignia NS-WBRDVD that keeps you connected? It's the Wi-Fi capabilities, of course. This feature will connect the NS-WBRDVD to your wireless home network, so you can link to other network-connected components, such as computers, without cables, to stream media. Add to that direct access to over 12,000 movie and TV titles through Netflix in the near future, and you have a bevy of multimedia options at your fingertips.

The BD-Live ready feature, available on select Blu-ray Disc titles, is also accessible on the NS-WBRDVD thanks to its Internet connectivity. BD-Live discs give you access to bonus movie content such as commentary, games, and trailers to give you an enhanced interactive film experience. Another benefit

of a connected Blu-ray Disc player is that it can download firmware and software updates.

Bonus Material

The NS-WBRDVD also includes a built-in USB port to transfer your extra BD-Live content from the NS-WBRDVD to a flash drive for future use. The port also allows you to plug in a USB flash drive to play your favorite songs in MP3 or WMA formats—you'll even see song information displayed on your HDTV. If you store digital photos (in JPEG format) on a USB drive, you can easily insert your drive into the NS-WBRDVD and view your memories in HD quality.

The Perfect Combination

Insignia's NS-WBRDVD Advanced Series Connected Blu-ray Disc Player will deliver the continued entertainment experience you crave by providing plenty of media options. Functioning as the ideal complement to your HDTV, it boasts the features and performance you want. **FC**

How To Buy An A/V Receiver

Unleash Your Home Theater's Video & Sound



Most people think of the HDTV as the centerpiece of a home-theater system, but in many ways, a small picture with big sound is superior to a big screen with anemic sound. And if you want the ultimate—a big picture with big sound—you need to budget for a capable A/V receiver.

The main function of an A/V receiver is to receive audio and video input from multiple sources, including DVD or Blu-ray Disc players, video-game consoles, and MP3 players, such as iPods or the iPhone, and output it to the appropriate equipment, such as a surround-sound speaker setup or your HDTV. They also serve as amplifiers and sound decoders, receiving multiple channels of audio and sending it to the appropriate speaker to fully immerse you in a surround-sound field (for more on surround-sound formats, see page 12). Beyond that, there are several key features to look for when shopping for an A/V receiver.

Wattage

A receiver must have ample power to properly drive all of the speakers attached to it. If you're unsure how much power your setup requires, a CE sales

associate can help you determine this based on your existing speakers or other speakers you plan to purchase.

Multiple Format Support

If you want to get the most out of your DVDs and Blu-ray Discs, be sure to get an A/V receiver that supports all the latest digital audio formats, including Dolby TrueHD and DTS-HD Master Audio, that can take full advantage of all the speakers in your surround-sound setup.

The Best Inputs & Outputs

The best A/V receivers have plenty of audio and video inputs and outputs, but whenever possible, avoid using analog Composite and S-Video connections. Instead, focus on finding a receiver that has the following.

Video

Component

This analog standard supports high-definition video but should only be used when HDMI is not available.

HDMI

High Definition Multimedia Interface is the ultimate video connection, offering digital high-definition video plus digital audio on the same cable.

Audio

Coaxial

Sometimes called coax, this may look like an analog cable, but it actually passes digital audio and supports most surround-sound audio formats

TOSLINK (fiber-optic)

Another digital audio connection, TOSLINK generally offers the same audio quality as coaxial cable and supports most surround-sound audio formats ●

Video Pass-Through

If you have a disc player connected via HDMI (see "The Best Inputs & Outputs" sidebar), it is important to send the raw digital video signal they output directly to your HDTV so that no additional video processing is applied to the pure, high-def video signal. To get the best video quality, look for an A/V receiver that can pass the signal directly to your HDTV without applying any extra video processing.

Video Upconversion

VCRs, disc players, some video-game consoles, and various other devices don't output video at the 720p or 1080p resolutions that are native to HDTVs. A good A/V receiver can take this low-res video output and upconvert it to high-res before sending it to the HDTV, improving picture quality even though the original material is not high-def.

Other Features

If you subscribe to satellite radio, there are A/V receivers that support the service so that you can enjoy your subscription on your home theater. Similarly, many receivers come with MP3 connectors that are useful if you want to easily incorporate an MP3 player into your setup. **FG**

BY TRACY BAKER

LED TVs Examined

Greening Up Your Home Theater

LEDs (light-emitting diodes) are certainly hitting the big time. They're making car taillights that last many times longer than traditional bulbs.

And they're on the verge of replacing the lights in your house with power-saving alternatives.

Moreover, LEDs are invigorating the HDTV market. TVs powered by LEDs can provide many of the picture quality benefits of plasma—deep blacks, shadowy details, smooth motion, vivid colors—but with much less heat and energy consumption. LED TVs cost more, but they gradually make up the difference in electricity bill savings.

Unfortunately, “LED TV” is a pretty confusing term. It's been used generically to describe several TV designs in the past few years, so let's clarify what the manufacturers are talking about.

Currently, Samsung (www.samsung.com) is using the term “LED TV” to describe its latest 6000, 7000, and 8000 series LCD models with LED backlights. These HDTVs are constructed like other premium LCDs, with one important change. Instead of lining the four edges of the screen with CCFLs (cold-cathode fluorescent lamps), Samsung uses rows of bright LEDs with broad color gamuts. As in most other LCDs, a white surface behind the screen reflects the light from the edges through red, green, and blue liquid-crystal filters that “open” and “close” as needed to color the pixels on-screen. Edge-lighting



Samsung UN46B8000 LED HDTV

\$2,599.99

www.samsung.com

allows these TVs to give viewers the benefits of LEDs in an ultra-thin display.

Meanwhile, LG (www.lge.com) sells LED-backlit LCDs with a more radical design. The company's H90 series, for instance, does away with edge lighting altogether. Instead, LG replaced the LCD's traditional reflective background with an LED array panel that spans the entire area of the display. This allows for a picture with an extremely high, plasma-like contrast ratio. It can boast very deep black levels because an individual LED behind a group of pixels in a dark part of the picture can simply turn off. In contrast, an edge-lit LCD can't darken individual parts of the display, so it must rely on “closing” its liquid crystals. On the other hand, array LED backlighting is expensive to produce. It also adds thickness to a flat-panel TV

when the market is trending toward thinner models.

There's one more type of LED TV we should talk about. An OLED (organic LED) is an LED TV in the purest sense of the term, as its red, green, and blue pixels provide the screen with both color and light. For years, TV manufacturers have demonstrated OLED TVs with beautiful picture quality. However, to date, only Sony has an OLED on the retail market, and it's an 11-inch, standard-definition model with a \$2,499.99 price tag. If manufacturers can come up with less expensive ways to create bigger panels with fewer shortcomings, OLED may someday become *the* technology popularly known as LED TV. **FG**

BY MARTY SEMS

Surround-Sound Formats

Flavors Of Dolby & DTS

F

or movie entertainment, surround sound beats the tar out of plain-old stereo. That's the easy part.

The picture gets a little cloudier when you realize that there's more than one surround-sound audio format. Each DVD and BD (Blu-ray Disc) movie comes with one or more soundtracks in various audio formats. This lets you choose the best-sounding option your disc player or home-theater audio equipment supports.

DVD formats. By default, most movie DVDs play a 5.1-channel (five speakers plus the ".1" subwoofer) Dolby Digital audio mix. However, you can usually access the disc's audio setup menu to choose sound format options, such as 5.1 DTS or 2-channel (stereo) Dolby.

Dolby Digital 5.1, also known as AC3, can sound good to great. However, DTS (Digital Theater System) sometimes provides richer sound partly due to its higher encoding bit rates (in Kbps). A few DVDs include 6.1- or 7.1-channel variations (requiring six or seven speakers, respectively, plus the ".1" subwoofer to handle the bass) on these formats with "EX" or "ES" suffixes.

BD formats. Blu-ray Discs can store five or more times as much data as DVDs, which makes room for new high-def audio formats. You'll often find the old standbys Dolby Digital and DTS on BD. However,



LG BD370 Blu-ray Disc Player
\$299.99
www.lge.com

you'll also discover better-sounding formats with improved compression (digital compaction to save disc space), such as Dolby Digital Plus.

Some discs even include high-end formats that are lossless (compressed without losing audio information), such as DTS-HD Master Audio and Dolby TrueHD. These can sound fantastic, but not all players and receivers can decode them.

All of the above formats are compressed, but a few blockbusters come with a large, uncompressed PCM (pulse code modulation) audio track. PCM is indistinguishable from the lossless formats, but all players support it.

Our recommendation. Students and families on a budget can enjoy decent audio from the basic formats with inexpensive surround-sound equipment. All of BD's advanced soundtracks (with the exception of Dolby TrueHD and PCM) will downgrade to Dolby Digital or DTS to support entry-level players and receivers. However, an investment in a disc player

or A/V receiver that can decode BD's best audio tracks will ensure that you're getting all of Blu-ray's aural benefits.

Technical notes. The following specs primarily concern audiophiles, but with higher sampling rates (in kHz), bit depths (in bits), and bit rates (in Kbps or Mbps), the better audio you'll have, theoretically.

Your movie disc audio formats will be decoded (turned into audible sound) by either your DVD/BD player (including a software player on your computer) or your A/V receiver, depending on their capabilities. The disc player's digital audio output setting determines which device does the decoding. Set it to "PCM" or "LPCM" (linear PCM) if your player decodes more of the formats your movie discs use or to "Bitstream" or "Raw" if your A/V receiver has better capabilities. You might also have to adjust your player's digital audio downmix setting to match the number of speakers you have (such as 2- or 5.1-channel). **FG**

BY MARTY SEMS

HDMI FYI

Everything You Need To Know

If you aren't using HDMI (High-Definition Multimedia Interface) cables with your HDTV, surround-sound system, and Blu-ray Disc player, then we must also assume you have a penchant for other silly behaviors, like holding scoops of ice cream in your bare hands. Without HDMI, you're missing out on all of the audio and visual bliss your system is capable of, and without waffle cones, your hands get cold and sticky.

Built Better

Almost all HDTVs, Blu-ray Disc players, and home-theater audio systems feature one or more HDMI ports, and because audio and video pass through the same cable, there's less cable clutter behind your home-theater system.

Standard HDMI cables are adequate for HDTVs that support 1080i or 720p resolutions and cable lengths of less than 6 feet, but LPCM (linear pulse code modulation)-formatted audio might play back slightly degraded.

HDMI cables that adhere to the latest specifications are often called High-Speed HDMI. These can handle everything your top-of-the-line HDTV can dish out: Deep Color technology (generates more colors in HD video); 8-channel/192kHz/24-bit audio; and Dolby TrueHD, Dolby Digital Plus, and DTS-HD Master Audio formats. The cables can also support the video bandwidth demands of 120Hz HDTV refresh rates and 1080p resolutions for cables 6 feet and longer.

See & Hear The Difference

HDMI is the only high-quality audio and high-definition video cable you need for your home theater. With anything less, your audio-visual experience can be noticeably inferior. HDMI's all-digital signal is crystal clear and lets you see and hear every detail of the content you're viewing as the content creator intended. Another benefit of the all-digital connection is that

because your HDTV and Blu-ray Disc player are natively digital, there is no digital-to-analog and analog-to-digital conversion, which keeps the image and sound quality top-notch.

Besides delivering superior audio and video performance, HDMI cables also support HDCP (High-bandwidth Digital Content Protection), which is a copy protection scheme used by Blu-ray Discs. If the content you're trying to view has these protections enabled, then the video resolution and audio quality could be significantly reduced. By supporting this protection scheme, content passing between HDCP-capable devices on an HDMI cable will never suffer from the scheme's negative effects.

Connect Your Game Console With HDMI

Some video-game consoles are Full HD devices, meaning they can benefit from HDMI the same way HDTVs and Blu-ray Disc players do. Much like movies on DVD and BD, most current video games support multichannel surround sound and HD resolutions, up to 1080p, and HDMI is the only cable around that can transport both. ●

The Ultimate Cable

If you want the best experience from your home theater (and who doesn't?), then HDMI is the only way to go. Do your eyes and ears a favor and make your home-theater connections with HDMI. **EG**

BY ANDREW LEIBMAN



A DVR Dilemma

Is It Better To Buy Or Lease?



One important question to ask when shopping for a DVR is this: Do I buy or lease? Thanks to TiVo, satellite TV providers, cable companies, and CE manufacturers, you have a choice. Your options include everything from a low-cost add-on to your monthly digital cable TV subscription to buying an HD DVD player/recorder with a hard drive.

DVRs let you record a program while watching one you've already recorded. Features vary, of course, but here are some key functions to look for in a DVR or DVR service: an on-screen EPG (electronic program guide), parental controls, sophisticated search tools, scheduling recordings via the Web, and recording an entire season's worth of shows with one command.

One of the best features of a DVR is being able to pause, rewind, and fast-forward programming. Think of how nice it would be to fast-forward through commercials to watch the funny antics in an episode of "The Office." If you miss the beginning of an episode that is

being recorded, you can rewind to catch the beginning while recording the rest.

If you'd like to get comfortable using a DVR before you buy one, then leasing is probably a wise choice. You can go this route whether you have digital cable or satellite TV.

Digital cable. You may get a DVR when you upgrade your digital cable service. Though terms depend on your cable provider, this is a low-cost option in many markets. Some cable companies lease a DVR for additional monthly fees, and they usually replace a digital TV set-top box. Check with your cable company about any additional fees, such as installation. You may be able to pick up a DVR set-top box at your local cable office and hook it up yourself, thereby saving any installation charges.

Satellite TV. Satellite companies typically offer subscribers an upgrade to a DVR for an additional monthly fee.

TiVo. Since its debut in 1999, TiVo (www.tivo.com) has continued to change its subscription packages and upgrade its DVRs. It offers dual-tuner

DVRs that let you record two programs at once, with certain restrictions, as well as HD DVRs. You can hook up a TiVo box to a TV receiving programming via an antenna, cable, digital cable, or satellite, and TiVo DVRs usually work with a broadband connection, although you may need to hook up to a phone line during the initial setup.

Buy Your Own DVR

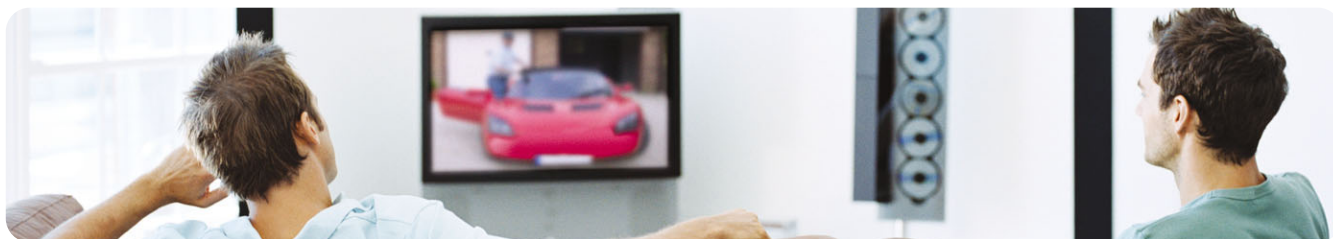
Instead of leasing, you may buy a DVR to obtain extra features and eliminate monthly fees. Combo units record programs, burn DVDs, and let you watch programs from the beginning, even as you're recording them. Some have an HDMI connection, so you can record and view HD programs on your HDTV.

As you mull over your options, head to your local consumer-electronics store to get a hands-on demonstration. Be sure to ask plenty of questions about how a DVR will work with your home-entertainment system. **PG**

BY RACHEL DEROWITSCH

Plasma & LCD Refresh Rate Differences

Tell Me Where It Hz



When shopping for an HDTV, you'll read and hear a lot about how well a particular model handles fast-motion video, such as sporting events and action movies. With LCD HDTVs, the refresh rate, such as 60Hz, 120Hz, or 240Hz, is the specification that tells you how well a given model will display that fast-moving video. And recently, manufacturers of plasma HDTVs have begun to list a refresh rate, such as 480Hz or 600Hz. Why the disparity among numbers? LCD and plasma HDTVs use different technologies to display video, and in this article, we'll tell you why you can't compare the numbers between the two HDTV types.

What Is A Refresh Rate?

A TV's refresh rate is the number of times per second a single video frame is redrawn on the screen. Current LCD technology can refresh the frames 60 times every second (60Hz), 120 times every second (120Hz), or 240 times every second (240Hz). The faster images are refreshed on-screen, the smoother the video motion will appear. Plasma HDTVs only redraw video 60 times a second, but because plasmas

use a different method to display the video frames (by electrifying cells of neon and xenon gas), motion blur is not an issue.

LCDs vs. Plasmas

LCDs are more likely to suffer from the effects of motion blur because a video frame will stay on-screen slightly longer than it would on a plasma HDTV. When you're watching a quick motion scene on an LCD with a 60Hz refresh rate, your eyes may see the frame long enough that the action seems to blur. LCD HDTVs with 120Hz and 240Hz

refresh rates use more frames per second or a scanning backlight that reduces the chance of seeing fast objects ghost across the TV screen.

The 480Hz and 600Hz "refresh rates" some plasma TVs boast actually refer to a technology that plasma sets use to display the picture, which is called sub-field drive frequency. Using a 60Hz refresh rate, a 480Hz plasma breaks the screen into eight sub-fields, while a 600Hz plasma features 10 sub-fields. Thus, a 600Hz plasma produces a 60Hz refresh rate in 10 different sub-fields, rather than the eight in a 480Hz model, to improve the set's ability to smooth motion in video and improve the clarity of still images.

Blur vs. Judder

Judder is a visual flaw that occurs when film is transferred to video. Movies and other film sources deliver video at a rate of 24 frames per second, which doesn't divide evenly into the 60 frames of video in 60Hz display technology. Because LCD HDTVs with 120Hz and 240Hz refresh rates are evenly divisible by 24, they suffer less from judder effects than 60Hz LCDs. To reduce judder in plasma HDTVs, manufacturers typically integrate anti-judder technology, which is another way to smooth choppy video in films. ●

Perspective

Due to the variations in display technology, you can't compare the listed refresh rates between LCD and plasma HDTVs, as they don't actually measure the same thing. As you consider refresh rate, keep in mind that motion blur is only really a factor in sports and action movies, so weigh its importance with other HDTV features, such as brightness, color quality, and available inputs. **FG**

BY NATHAN LAKE

Yes, You Need To Calibrate

Get Optimal HDTV Video Results

The HDTV is the center of attention in any home-theater setup. To ensure it is providing the best video results, consider a professional HDTV calibration.

Your Video May Not Be All That It Seems

While every HDTV owner is unique, the display settings on an HDTV may not be. If you want to ensure lifelike image quality for your HDTV, you'll need a professional to perform a calibration.

- Most TVs are shipped with a set standard video mode meant for an electronics store display—this means that the TV's settings are adjusted to show the best picture in a bright, fluorescent-lit environment. Because it's unlikely your lighting at home matches the store's surroundings, you should have your TV professionally calibrated by an ISF (Imaging Science Foundation)-certified specialist to

accommodate your home's unique lighting environment.

- An HDTV's viewing angle and your home-theater setup also affect how your HDTV should be calibrated. An ISF-certified professional takes these factors into account when making adjustments.
- Although you can expect to budget 10 to 15% of the purchase price of your television for a professional calibration, consider it an entertainment investment that will pay dividends for years to come.

Why A Professional Calibration?

Instead of taking a chance with your HDTV investment, rely on professionals to handle the work for you.

- Calibration specialists are ISF-certified, which means they are trained to use highly specialized and expensive equipment to calibrate HDTVs correctly.
- A calibration DVD may be a tempting alternative, but it won't let you adjust all of your HDTV's settings. An ISF-certified professional can access advanced service menus to calibrate your TV correctly. These settings aren't

meant to be experimented with, so if you poke around and gain access to your TV's service menu, it's best to leave it alone. Many people have rendered their TVs useless because they didn't know which settings they were changing.

- Calibration DVDs only adjust video settings for your HDTV's DVD input. This means when you're watching video from a source other than a DVD, your picture won't be calibrated. A professional calibration takes care of two source inputs, such as your DVD player and cable box inputs.

What You Can Expect

An in-home calibration service will typically last about two hours and includes the following:

- A professional will use color-analyzer equipment to objectively tune color saturation and temperature as precisely as possible, letting you see crisp, clear video that is more true-to-life.
- Your HDTV's contrast will be set up to provide greater video detail as well as the darkest blacks and brightest whites.
- No matter which calibrated source input you are using, you will enjoy the best image clarity and sharpness that your HDTV can provide. **EG**



FirstGlimpse

HDTVs

Screen Technology Differences



LCD (liquid-crystal display)

LCDs can use one of two backlight technologies. CCFLs (cold cathode fluorescent lamps) are the most common, but LEDs are the latest backlight technology to hit the LCD scene. (See the “LED” section for more info on LED TVs.)

Pros

- The thin profiles and light weight of LCDs make them easy to mount on a wall.
- Power demands are a bit lower than comparably sized plasma displays and considerably lower than CRT televisions.

Cons

- Fast-moving images may suffer from a slight trailer effect, but with improved

LCD technology, the effect is barely perceptible.

- When pixels stick on or off, they show up as either a pinpoint of bright light or black, which can be distracting on-screen.
- From certain viewing angles, LCDs will lose video contrast and color.
- LCDs with CCFL backlighting suffer from leaking light, and unlike LEDs, they can't dim certain areas on-screen. This may result in blacks and whites that appear to be more gray in color.

Best For

- Streaming PC content
- Bright, sunny rooms

LED (light-emitting diode)

LED TVs are actually a type of LCD TV. These sets use one of two LED backlight technologies:

- Full-array lighting places LEDs behind the screen in a grid pattern, letting the TV dim certain LEDs for the best contrast ratios available.
- Edge-lit sets have LEDs placed around the frame of the TV, and light is directed toward the center of the screen. Edge-lit models cost less than full-array sets and are a lot thinner.

Pros

- By using LEDs, these sets use a lot less electricity than other HDTVs, and

they don't contain harmful mercury.

- Overall, LED TVs are one-third thinner than other LCD TVs and have longer life spans.
- Plasmas are well-known for their deep blacks and crisp whites and fast response times, but LED TVs closely match in performance.

Cons

- These sets are costly because they feature a relatively new technology
- Blooming, or a halo effect, may encircle bright images that are on dark backgrounds.

Best For

- Eco-conscious viewers
- Fast-paced gaming

Plasma

Pros

- A plasma TV's phosphors light up evenly across the screen to create images, which are consistently bright and clear with vibrant colors.
- The contrast ratio is high, so you'll see some of the darkest blacks and brightest whites.

- The design and technology of plasma TVs lend themselves to large screen sizes—typically 50 inches or greater.
- Rapid pixel response means no blurry motion.
- Wide viewing angles give you the same high-quality images on-screen no matter where in the room you happen to be sitting.

Cons

- Some plasmas are susceptible to image burn-in if not cared for properly.
- Low air pressure and high altitudes may cause plasmas to buzz.
- Some plasmas have highly reflective glass, which isn't ideal in sunny settings.

Best For

- Large groups who watch TV together
- Movies or sports with nonstop action

RPTV (rear-projection TV)

Pros

- RPTVs are surprisingly lightweight for their sizes.
- You'll find exceptional picture quality on very big screens (65 inches and larger).

- As screens get bigger, RPTVs tend to be more cost-effective than an LCD, LED, or plasma TV.

Cons

- With depths of 16 to 24 inches, these TVs are far too big and bulky to mount on a wall.

- RPTVs require costly lamp replacements every few years

Best For

- Anyone who wants to bring a cinematic experience home
- Big, roomy home theaters

Essential

THINGS TO KNOW

INTERNET SET-TOP BOXES

Q What does an Internet set-top box do?

A It links your TV to your Internet connection, mainly for the purpose of playing Web-based video. Some provide additional functions, such as accessing photo-sharing sites, Internet radio stations, and Web surfing.

Q How does a set-top box connect to my Internet service?

A Nearly all of them provide the option of using a wired or wireless connection via Ethernet or Wi-Fi, respectively.

Q How does an Internet set-top box connect to my TV or home theater?

A Most let you choose between HDMI, Component video, or Composite video connections. For the best image quality, use HDMI or Component.

Q What types of video content will an Internet set-top box provide?

A Some boxes are tied to rental businesses to directly deliver movies and TV shows to your TV. Others come from VOD (Video-On-Demand) outlets. Some also (or exclusively) access content on YouTube and other video-based Web sites.

Q Is it possible to store video content on the set-top box?

A Yes, if the unit has a built-in hard drive. If not, it still might have a USB or other port to which you can attach an external hard drive.

Q What connection speeds do I need for reliable video service?

A You'll need a broadband connection. For standard-definition content, you should be able to get by with 1 to

2Mbps speeds. For HD content, you'll probably need 6 to 8Mbps or faster.

Q Can an Internet set-top box replace my cable or satellite TV box?

A Only if Internet-based video is all you plan to watch from now on. Currently, Internet set-top boxes don't access regular broadcast and cable TV channels. However, some manufacturers regard this as a future goal.

Q Why couldn't I just use an Internet-connected computer and hook that up to my TV?

A You could. However, not everyone finds the sight of a computer in the living or family room visually appealing. Depending on the computer, it might also mean foregoing the use of a remote control.

Q Is an Internet set-top box a one-time expense, or will it commit me to a monthly charge?

A It depends on the box. Some serve as the front end for subscription services and pay-per-view selections. Others access free content.

Q Does a set-top box offer any advantages over using a regular computer?

A Simplicity, for one. An Internet set-top box is preconfigured with a user interface and menu options that will take you directly to the content it provides, all of which is selectable by remote control.

Q What are the potential drawbacks of investing in an Internet set-top box?

A A subscription service could go out of business. Also, Internet set-top box functions are increasingly being built into HDTVs, Blu-ray Disc players, and other devices. And if your Internet provider limits your broadband service, you may not get unlimited use of the box.





HDTV Glossary

B alderdash! OK, HDTV jargon isn't *that* bad, but there are a few terms every shopper should know. Here's your cheat sheet.

aspect ratio—Put simply, it's the shape of the TV's screen. An HDTV has a wider picture than a traditional TV of the same vertical screen height. An HDTV has a 16:9 aspect ratio, meaning that if its screen were 16 inches wide, it would be 9 inches tall. A regular 4:3 TV screen would be 12 inches wide at the same 9-inch height.

HDMI—High-Definition Multimedia Interface is a type of cable connection that carries both high-resolution video and uncompressed multichannel audio among HDTVs, home-theater receivers, and other components. HDMI cables maintain top picture and sound quality.

HD tuner—Some more expensive HDTVs include a built-in tuner for receiving local high-def broadcast TV channels. Your TV doesn't need an HD tuner if you have cable or satellite service. Separate HD tuners and antennas are available for HDTVs without them.

interlaced—When an HDTV displays an interlaced image, as in 1080i or 480i resolutions, it really shows you every other horizontal line of a frame of video (called a field) at a time. Sixty times a second, the TV displays the other field of the frame, meaning the lines not shown in the previous field. Interlaced video can appear to flicker or might cause moving objects on-screen to have blurred edges.

LCD (liquid-crystal display)—Like a notebook's screen, an LCD HDTV uses a fluid crystal substance to form pixels of color in front of a backlight. LCDs may not be able to match plasma TVs' deep black and gray areas, but they're lighter, sometimes less fragile, and considered easier to set up. These work better in brighter rooms or if you will be playing unchanging images on the screen for an extended period of time.

plasma—Plasma TVs use a tiny tube of gas for each pixel. Electricity makes each pixel glow. Plasmas create deeper blacks and sometimes brighter colors than LCDs and have better contrast. These also offer slightly better viewing angles. However, older or less expensive models can also suffer permanent screen damage if an unchanging image

is displayed too long, such as a TV channel's stock ticker or parts of certain video games.

progressive scan—A TV showing a progressively scanned image, as in 1080p or 720p resolutions, displays a full frame of video (both odd-lined and even-lined fields) all at once. Progressive-scan video looks sharper and doesn't flicker like interlaced images can.









projection—Some large-screen HDTVs offer lower-priced alternatives to LCDs or plasmas by using projection technologies. These technologies vary, but all projection TVs throw light on a screen from the front or rear. This means they are bulkier than plasmas or LCDs, but some rear-projection sets have stellar picture quality.

viewing angle—No matter where you sit in front of an HDTV with a wide viewing angle, such as 170 degrees, its picture should look reasonably good. Test this before you buy.

widescreen—A TV or monitor that's wider horizontally in relation to its vertical height. HDTVs typically have a 16:9 aspect ratio rather than an older 4:3 display. **PG**

Which LCD TV Is Best For You?

So you've decided to get an LCD TV. The next step is deciding *which* LCD TV to invest in. With all the models on today's market, you want to be sure the model you select is the best for you and your family. Refer to this chart for further help when shopping.

		Size	Dimensions; Weight***	Native resolution	Viewing angle	Inputs	Outputs	Refresh rate**
What It Means		The diagonal measurement of the TV's screen	Height x width x depth; how much the TV weighs	A fixed TV resolution; images are best displayed in the native resolution	The maximum angle at which the viewer can see the screen clearly	Inputs let you connect your components to your TV	Outputs transfer information from your TV to peripherals, such as audio to speakers	Speed at which a screen is redrawn every second
	Insignia Advanced Series NS-L42X-10A MSRP: \$799* SKU 9202374	42 inches	40.2x26.2x5.5 inches; 43 pounds (with stand)	1080p	176 degrees	5 HDMI; 2 Composite; 2 S-Video; 2 Component	2 audio	120Hz
	Panasonic VIERA TC-L37X1 MSRP: \$799.95* SKU 9235124	37 inches	22.8x36.1x3.9 inches; 36 pounds (with stand)	720p	178 degrees	3 HDMI; 1 DVI; 1 S-Video; 1 Component; 2 Composite; 1 PC; 1 RF	1 audio	60Hz
	LG 42LH50 MSRP: \$1,699* SKU 9321637	42 inches	25.9x41.4x3.6 inches; 37.9 pounds	1080p	178 degrees	4 HDMI; 2 Component; 2 Composite; 1 RF; 1 USB; 1 LAN	1 audio	120Hz
	Sony Bravia KDL-40VE5 MSRP: \$1,699.99* SKU 9348155	40 inches	38.8x25.1x4.1 inches; 38.8 pounds	1080p	178 degrees	4 HDMI; 2 Component; 2 Composite; 1 S-Video; 1 PC; 1 RF	1 audio	120Hz
	Samsung LN46B640 MSRP: \$1,899* SKU 9293506	46 inches	30.4x46.1x3.1 inches; 44.8 pounds	1080p	N/A	4 HDMI; 2 Component; 2 Composite; 2 USB; 1 PC	N/A	120Hz
	Sharp AQUOS LC-52D85U MSRP: \$2,299.99* SKU 9034243	52 inches	31.34x49.3x3.16 inches; 52.9 pounds	1080p	176 degrees	5 HDMI; 2 Component; 2 Composite; 1 S-Video; 1 PC	N/A	120Hz
	Toshiba Regza 55ZV650U MSRP: \$2,399.99* SKU 9315877	55 inches	35.5x53.6x15.6 inches; 80.5 (with stand)	1080p	N/A	4 HDMI; 2 Component; 2 Composite; 1 S-Video; 1 PC	1 audio	240Hz
	Sony Bravia KDL-46XBR8 MSRP: \$4,699.99* SKU 8996508	55 inches	53.62x33.03x4.43 inches; N/A	1080p	N/A	4 HDMI; 1 S-Video; 2 Component; 1 PC; 1 USB; 1 SD	2 audio	120Hz









*Prices listed in this issue are for general reference and may vary from retailer pricing.

***Unless specified, this is without stand

** Comparing refresh rates between plasma and LCD TVs is like comparing apples to oranges. For more in-depth information about refresh rates, please ask a sales associate.

Which Plasma TV Is Best For You?

If you're planning on buying a plasma HDTV, it might be hard to decide on one just by looking at a wall of gorgeous sets. Refer to this chart for further help when shopping.

		Size	Dimensions; Weight***	Native resolution	Viewing angle	Inputs	Outputs	Refresh rate**
What It Means		The diagonal measurement of the TV's screen	Height x width x depth; How much the TV weighs	A fixed TV resolution; images are best displayed in the native resolution	The maximum angle at which the viewer can see the screen clearly	Inputs let you connect your components to your TV	Outputs transfer information from your TV to peripherals, such as audio to speakers	Speed at which a screen is redrawn every second
	Samsung PN42B450 MSRP: \$799.99* SKU 9235259	42 inches	26x41.6x2.9 inches; 61.3 pounds	720p	N/A	3 HDMI; 1 Composite; 1 PC	N/A	600Hz
	Panasonic VIERA TC-P42X1 MSRP: \$899.95* SKU 9219213	42 inches	N/A	720p	N/A	3 HDMI; 1 S-Video; 2 Component; 2 Composite	1 audio	600Hz
	Panasonic VIERA TC-P50X1 MSRP: \$1,099.95* SKU 9219062	50 inches	32.125x48x4.125 inches; 75 pounds	720p	N/A	3 HDMI; 1 S-Video; 2 Component; 2 Composite	1 audio	600Hz
	Samsung PN50B450 MSRP: \$1,199.99* SKU 9239371	50 inches	29.5x48.1x2.9 inches; 77.2 pounds	720p	N/A	3 HDMI; 1 Composite; 1 PC	N/A	600Hz
	Insignia NS-P502Q-10A MSRP: \$1,299.99* SKU 9299886	50 inches	32x48.4x11.8 inches; 72.7 pounds	1080p	N/A	2 HDMI; 2 Component; 1 Composite; 1 RF	N/A	60Hz
	Pioneer KURO PDP-5020FD MSRP: \$2,499* SKU 8869147	50 inches	28.4x48.6x3.6 inches; 74.1 pounds	1080p	N/A	4 HDMI; 1 Component; 3 Composite; 1 PC; 1 RF	3 audio	60Hz
	LG 50PG60 MSRP: \$2,499.95* SKU 8962045	50 inches	31.2x48.7x3.1 inches; 87.5 pounds	1080p	N/A	4 HDMI; 2 Component; 1 S-Video; 1 RF; 1 PC	3 audio	180Hz
	Pioneer PRO-141FD MSRP: \$7,000* SKU 8982979	60 inches	34.5x57.68x2.53 inches; 110 pounds	1080p	N/A	4 HDMI; 1 Component; 1 Composite; 1 PC	N/A	60Hz

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**Comparing refresh rates between plasma and LCD TVs is like comparing apples to oranges. For more in-depth information about refresh rates, please ask a sales associate.



DLP HDTV

Large Screen Entertainment



**Mitsubishi 837 Series
1080p Home Theater
TVs (WD-65837/WD-
73837)**

MSRP: 65-inch model \$2,199
SKU 9330761

MSRP: 73-inch model \$2,999
SKU 9330841

MSRP: 82-inch model \$4,999
SKU 9331412

www.mitsubishi-tv.com/http

Quick Overview

The Mitsubishi 837 Home Theater TV outshines other smaller DLPs on the market, thanks to its exceptional entertainment experience. The UltraThin Frame won't overwhelm your home-theater room and the high-end video performance features, such as Perfect Color, PerfectTint, and Dark Detailer, will display an impressive image across the screen. Above all, the Mitsubishi 837 features high energy efficiency, consuming half as much power as comparable flat panels.

Perfect For

Anyone who wants to go green yet still enjoy an outstanding visual experience.

Outstanding Benefits

- **3D Viewing capabilities:** 3D-ready for multidimensional movies and games*
- **Expansive screen size:** 82-inch screen size offers more than enough viewing room
- **Customized Video Modes:** Brilliant, Bright, Natural, Game, ISF Day, and ISF Night
- **Enhanced energy efficiency:** Energy Star 3.0 rating
- **Improved Processing:** Plush1080p 5G 12-bit processing
- **Improved Video Noise Reduction:** Clears up video distortions to provide a brilliant image

Coollest Feature

Watch the latest 3D movie or game releases using the Mitsubishi 837's 3D-ready capabilities. Visit Mitsubishi-TV.com/3D for more information.

* 3D video, gaming and dual-screen features require compatible 3D source devices, 3D glasses and IR emitters. In order to display 3D images, Mitsubishi Home Theater DLP® TVs and LaserVue™ TVs require source devices to support checkerboard display formats for display of 3D gaming or 3D cinema content. A 3D standard format does not currently exist for Blu-ray™ or DVD prepackaged media. A 3D standard may emerge that is not compatible with Mitsubishi Home Theater DLP® TVs or LaserVue™ TVs.

FirstGlimpse

SONY

LCD HDTV

Go Green Without Sacrificing Picture Quality



Sony BRAVIA
VE5 Eco Series 40" HDTV

MSRP: \$1,699.99

SKU: 9348155

www.sony.com

Quick Overview

Introducing the Sony BRAVIA VE5 HDTV, a revolutionary TV that combines energy-saving features with quality picture performance. Minimize excess power use with a high-efficiency backlight that uses more than 50% less power in Home Mode than Energy Star 3.0 requirements. Plus, enjoy Full HD 1080p picture quality and smooth motion with Motionflow 120Hz technology.

Perfect For

People who want a superb home-theater experience with the added benefits of energy efficiency.

Outstanding Benefits

- 16:9 Full HD 1080p Resolution Panel (1920 x 1080)
- Motionflow 120Hz technology
- High-efficiency HCFL backlight
- Dynamic contrast ratio: 100000:1
- Energy-Saving power switch
- LightSensor technology
- Dynamic Backlight Control
- BRAVIA Sync capable
- 24p True Cinema capable

Cooler Feature

If the Presence Sensor detects that you've been away from your HDTV for a certain amount of time, the backlight will turn off, helping you conserve energy even if you or your family members forget to turn off your HDTV.

Accessories & Services

As you head toward the HDTV section of your local consumer electronics store, you'll invariably pass shelves of bland-looking HDTV accessories. Sure, these accessories have multichannel audio, gold-plated connectors, nitrogen-injected insulation, and fully articulating mounting arms, but they

can't compete visually with their big-screen flat-panel HDTV counterparts. Despite outward appearances, however, there are a handful of accessories that are vital to getting the most from your HDTV. The following is a rundown of accessories we recommend to complete your home-theater setup. **FG**

WALL MOUNTS & BRACKETS

- Let you view your HDTV from the best possible angle
- Give you the ability to adjust your HDTV when necessary
- Maximize space in your living area

HDMI CABLES

- Carry uncompressed digital audio/video signals to and from your HDTV and its components
- Shielding in higher-end models eliminates interference from other components
- Well-built connectors ensure a snug, stable fit

CLEANING KIT

- Protect your HDTV's screen by using specially formulated sprays and cloths
- Eliminates the dangers of scratching delicate screens
- No-drip formulas prevent damaging other home-theater equipment

CORD-CONCEALMENT KIT

- Hide multiple cords while keeping them organized
- Minimize cord clutter, especially with wall-mounted sets
- Keep the focus on your new HDTV, not the cords connected to it

UNIVERSAL REMOTE CONTROL

- Simplify your home-theater setup with one remote that can control all of your components
- Program functions to watch a movie with the click of one button, for example
- Easily view options in the dark with a backlit LCD

SURGE PROTECTORS/POWER CONDITIONERS

- Protect your home theater from potential damage by using a surge protector that will absorb electrical fluctuations
- Filter out "dirty power," also known as electrical "noise" and radio interference, that can degrade your home theater's audio and video with a power conditioner
- Have peace of mind knowing that your home theater will give you its peak performance for the longest amount of time

SURROUND-SOUND SYSTEM

- Maximize your HDTV experience with more theater-like audio
- Feel like you're in the movie scene instead of just watching it
- Even out softer and louder programming with an equalizer

TV STANDS

- Offer flexibility if you're unable to mount your HDTV on the wall
- Available in a variety of finishes to match any décor
- Provide a place for additional home-theater equipment

HOME-THEATER SERVICES

A home theater is a pretty big investment, so it's wise to consider letting a professional handle your installation and setup. Let your local CE retailer tackle the following tasks, and you'll be able to enjoy the full glory of HD in no time.

- Home Theater In-Home Consultation
- TV Recycling
- TV Calibration
- TV Mounting & Cord Concealment
- Remote Control Programming
- Speaker Setup



Epson Artisan 50 Ink Jet Printer
\$99.99
www.epson.com



How To Buy A Photo Printer

Get Photo Prints Whenever, Wherever



Whether you want to frame your memories, give prints to friends, or store your photos in an album, you can conveniently create your own high-quality prints with a photo printer. Here's what you should know in order to find a photo printer that's right for you.

Important Features

Photo printers let you experiment with printing photos in different paper sizes, so if you only want to create 4x6s or 5x7s, look for a printer that falls on the lower end of the price spectrum. However, if you want to make prints that are larger, there are high-end photo printers that can output all the way up to photos that are 13x19.

To achieve the same look of lab-quality prints, make sure the printer you select offers borderless images.

This feature will allow you to make prints that develop to the edge of the photo paper instead of white borders that appear all the way around the picture. With some photo printers, you can also eliminate red-eye, resize images, and add creative elements, such as borders, frames, and clip art without the use of a PC. A photo printer with an LCD screen and memory card slots will allow you to quickly view and tweak your photos prior to making prints, ensuring they look their best.

Connect The Dots

The amount of detail rendered by a photo printer is commonly referred to as the printer resolution. The higher the printer's resolution, the better your photo quality will be. The details of a landscape photo, for example, will be crisper and clearer. Another factor to consider is a photo printer's ink drop size, which is measured in picoliters. A higher number of picoliters will also result in more detailed print results.

Additional Details

Other photo printer features you may want to factor into your decision include print speed, the number of ink cartridges the printer uses, and the photo printer's size. Print speed is measured in ppm (pages per minute), and a higher speed can save you time if you're printing several photos for a scrapbook. If you want to achieve photo results that look more true-to-life, a photo printer that uses multiple ink cartridges for different hues is likely to produce more realistic color results. And if you want to be able to make prints at home and when you're on the go, look for a photo printer that's compact enough for travel.

Because many of us live hectic lives without a lot of free time, a photo printer can offset ordering and making multiple trips to the store to pick up prints. They also give you the added convenience of creating photos whenever you please. **FG**

BY TESSA WARNER BRENNEMAN

Suit Your Storage Needs

Which Camcorder Type Is Best For You?

The approaching school year is sure to be full of events you'll want to capture on video, such as your daughter's baseball team taking on its biggest rival or your son singing a solo in his second grade musical. But before you purchase a new camcorder, you should first consider which of the many camcorder storage types is best for you. Two of the most common are hard drive camcorders and flash memory camcorders.

Hard Drive vs. Flash Memory

The difference between a hard drive and flash memory camcorder is the type of recording storage they offer. A hard drive camcorder contains a mechanism that reads and writes video data on magnetic, spinning platters. It's the same storage unit that you find in computers. Because this memory format contains moving parts, hard drive camcorders are more susceptible to damage from accidental drops or bumps. A sudden jolt to the hard drive could hurt the internal components and cause data loss.

On the other hand, the storage in flash drive camcorders doesn't have mechanical movement; it's the same type of file storage that's used in a USB flash drive or memory card. Because there are no physically moving pieces that can be broken or wear out, flash memory camcorders can better withstand the rough ride that comes when the kids want to try out their videography skills.

JVC's Everio Digital Camcorder MS120R
\$299.95
www.jvc.com



The Benefits

Hard drive camcorders will typically offer more storage space than flash memory models, making them ideal for storing video of all-day events such as a wedding or a visit to the zoo. Hard drive camcorders range from 30 to 120GB of storage, whereas flash

camcorders may have only 8 to 64GB of internal storage.

Although they can be more delicate than flash memory camcorders, hard drive camcorders are perfect for budget-minded families who plan to document their kids' play around the neighborhood because they are less expensive than their flash memory counterpart.

Generally smaller in size and weight, flash memory camcorders are compact and ideal for portable use. A lightweight camcorder, such as JVC's Everio Digital Camcorder MS120R (\$299.95; www.jvc.com) that weighs only 8 ounces, is the perfect companion for a last-minute summer vacation. And with the sturdiness that flash memory provides, you don't have to worry about the well-being of your camcorder, even on a rugged hiking trip.

Store Your Memories

Whether you're looking for a camcorder that can store hours of video footage, or one that can withstand the bumps and bruises of travel, a hard drive or flash drive camcorder might be your perfect fit. **FG**

BY KRIS GLASER

On-The-Go Camcorder Accessories

If you're headed off on one last adventure before the school year begins and plan to carry along your camcorder, don't forget to pack essential accessories that will safeguard your camera and ensure that you can film your trip from beginning to end. Invest in a padded camcorder case to help protect it from accidents. Choose a case with extra pockets and tuck away an extra battery pack so you don't have to worry about missing a special moment because your batteries are dead. For the same reason, also carry along an extra memory card in case your hard drive or internal flash memory becomes filled. ●

FirstGlimpse



DIGITAL IMAGING

Take Control

Manual Exposure Advantages

W

ith a variety of preset shooting modes to choose from, such as Action, Landscape, Close-up, Portrait, and Night, you'd think point-and-shoot cameras would offer enough settings to cover all of the environments you run into. Unfortunately, even when you select the appropriate scene mode, your photos may not turn out the way you want them to.

For example, when capturing a carnival at night, a point-and-shoot's Night mode might produce blurry and overly bright photos of the lit attractions, as the carnival's swirling lights would provide too much light to use the mode. In this article, we'll cover how digital cameras with a manual mode give you greater control over your photos.

Manual Options

A camera's full manual mode is like a scene mode, but you can adjust settings from the camera's on-screen display, giving you control of the camera's shutter speed, ISO setting, and aperture controls. Shutter speed is the actual amount of time the camera's image sensor is allowed to capture light. With

fast-action subjects, you'll want to use a quicker shutter speed, such as 1/250th of a second, to freeze the scene. At night, you need to keep the camera shutter open longer, such as 1/8 of a second, to let more light reach the sensor, but you also need to keep the camera steady to get a clear image, because any hand movement during the exposure time will cause the image to be blurry.

The ISO level, such as 200, 400, or 800, is how responsive the camera's sensor is to light. In low-light conditions, you

can increase the ISO to match the light and avoid using slow shutter speeds that may produce blurry images. In bright conditions, you can decrease the ISO to use a longer shutter speed to capture greater detail. The aperture (also referred to as f-stop), such as f/2.8, controls the size of the opening in the camera's lens, so you can allow more or less light, as needed. The lower the aperture number, the larger the lens opening will be.

Shopping Tips

Both D-SLRs and some point-and-shoot cameras offer full manual modes. Some models also feature "priority" modes, where you adjust one exposure setting, such as the shutter, and the camera automatically sets the other exposure controls to best suit what you select. A camera with a shutter priority mode is ideal when you're capturing sports and other action shots because you can choose a speed that can freeze the scene, such as 1/500 of a second, without missing the action while you adjust all the manual exposure settings. Photo enthusiasts who want complete control should look for a camera that offers a full manual mode. **FG**

BY NATHAN LAKE

What A Catch

Football season is starting, and as nighttime falls on a game, you'll need to continuously adjust your camera's exposure settings to match the changing light environment. The subtle light changes are not well-suited for a camera's scene modes. Exposure settings that produce great images when the field is half-shaded at sunset will likely appear blurry when the game is photographed under bright lights. But if your camera offers manual exposure settings, you can make subtle adjustments and capture great freeze frames from the first to the fourth quarter. ●

Filters For All

Enhance Your Photos & Videos

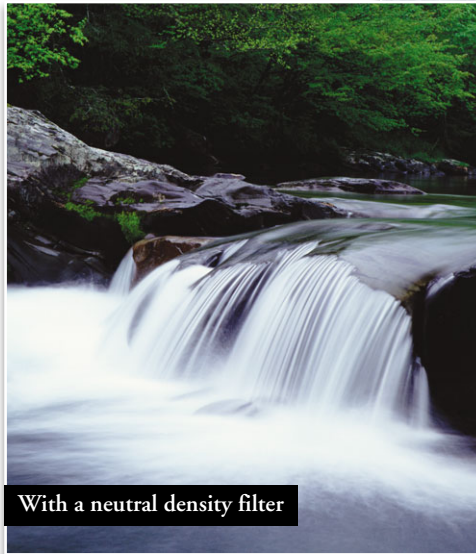
There are many essential camera and camcorder accessories, including bags, tripods, batteries, and memory cards. Camera and camcorder filters, however, are often overlooked. Using a filter with D-SLR cameras and camcorders affects the image through the manipulation of light to improve the color, clarity, detail, and contrast of your shots.

Basic Filters

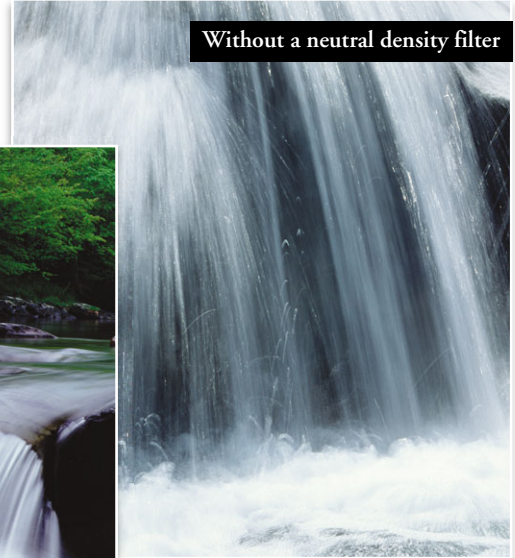
A filter is a glass or plastic disk that attaches to your camera or camcorder lens. The basic purpose of a filter is to affect how much light is allowed into the camera or camcorder's optical path in order to make the image appear more natural and to produce richer colors. There are several different filter types available, including UV, polarizing, and neutral density.

UV filters prevent ultraviolet light (short wavelengths of light produced by both sunlight and lightbulbs that make objects appear to be hazy or to glow) from entering the lens. A UV filter will make outdoor shots appear sharp and less foggy. When you're capturing a photo of your child eating ice cream on your patio, the colors will be warmer and more natural because much of the UV light has been filtered out.

Polarizing filters are designed to reduce glare and reflections from items that reflect light, such as glass, mirrors, water, or snow. They also help intensify colors and provide better contrast in your photos and video. Because the sky is



With a neutral density filter



Without a neutral density filter

overly lit with sunlight, when you are capturing either still or moving outdoor pictures, a polarizing filter will help produce a more visually appealing sky that's colored a deeper blue.

Neutral density filters work like sunglasses; they reduce the amount of light that enters your camera's lens without affecting the overall color of your shot like UV filters do. When used outdoors, a neutral density filter can isolate your subject in a bright setting, such as the kids playing in the surf during a beach

vacation. These filters will also help you shoot photos using a slow shutter speed to achieve intentional motion blur effects in your photos or increase depth of field using a wider aperture.

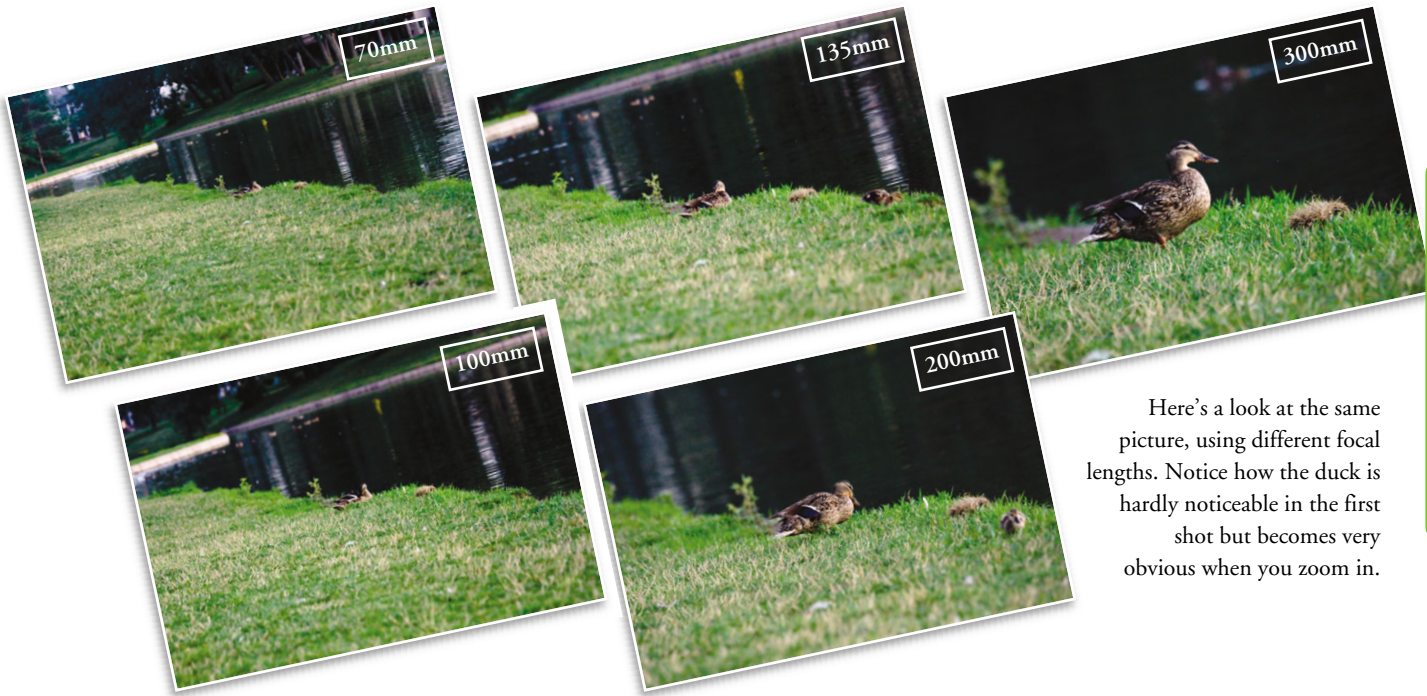
Special Effects Filters

No matter your photography or videography level, filters that add special enhancements can help boost the artistry and effect of your work. Cross screen, or star effect, filters will provide a soft focus and add star beams to the points of light in your image. When used at night, these filters will create four-, six-, or eight-point starbursts where light reflections or projections appear, such as those you find on a brand-new car or in an evening cityscape. For example, if you want to snap a photo of a street light illuminated at night, the star effect filter will give it between four and eight beams of light coming directly from the lamp. **FG**

Extra Benefits

In addition to enhancing your images or adding special touches for a unique result, filters can also help protect your camera or camcorder's lens from scratches and dust, which can increase the life of your lens while also helping you produce better photos and videos. ●

BY TESSA WARNER BRENEMAN



Here's a look at the same picture, using different focal lengths. Notice how the duck is hardly noticeable in the first shot but becomes very obvious when you zoom in.

DIGITAL IMAGING

Spanning The Spectrum

Focal Lengths Explained

If you've shopped for a D-SLR camera before, you've probably noticed that many are available in a kit that includes a camera body and lens. Kit lenses typically have a focal length range of 18 to 55mm. Focal length describes a lens' zoom capabilities. There are many other lenses available, each of which has a different purpose. For example, telephoto lenses let you zoom in to get a closer look, whereas wide-angle lenses let you see more of your surroundings. By understanding the difference in focal lengths among lenses, you'll have a better knowledge of which type of lens best suits your needs. If you're in the market for your first D-SLR, you may find that using a lens other than the kit lens will best suit your needs. As a result, you may decide to forgo the kit lens and save money by buying just the camera body and then put the money you saved toward a specialized lens.

Basic Lens Types

Typically, lenses are grouped into categories based on their focal length. A wide-angle lens gives you a broad field of view. Wide-angle lenses usually have a focal length of 40mm or less. Standard lenses have focal lengths

ranging from about 30 to 50mm. This type of lens most closely matches the perspective of the human eye. Telephoto lenses magnify objects and typically have focal lengths higher than 50mm. Lenses with a focal length greater than 200mm are called super-telephotos. Close-up or macro lenses let you focus on something that is a short distance from the camera. Macro lenses can range in focal length.

Shooting Range

A standard lens is perfect if you want a range of wide-angle to slightly telephoto views.

With a macro lens, you can take close-up shots of small objects, such as flower petals, without distorting the image.

If you're into nature photography, you may want a telephoto zoom lens. With this lens, you'll be able to photograph wildlife in a national park without needing to get too close. ●

Choose Your Zoom

In general, the kit lens that accompanies a D-SLR is a good starter lens. As your photographic needs grow, it's worth considering specialized lenses. Because focal length determines your range of view, it will play a big part in helping you decide which type of lens will best suit your photographic needs. **FG**

BY JENNIFER JOHNSON

Essential

THINGS TO KNOW

D-SLR LENSES

Q Unlike point-and-shoot cameras, D-SLRs have removable lenses. Why is that important to many photographers?

A Having removable lenses lets you take different types of photos in different situations. They give a photographer more flexibility and offer more creativity.

Q How do I know which lens is right for my D-SLR camera?

A Start by determining how you intend to use the camera and what type of subjects you will shoot most frequently. Will you photograph inside or outside more? Will you take portraits or focus on nature? Answers to these questions will help you determine what type of special lens you need, but you can ask a Digital Imaging associate for assistance in this decision.

Q Why is focal length important?

A Measured in millimeters (mm), focal length determines the magnification of your subject, depending on the measurement of the lens.

Q What is aperture, and how does it affect my photos?

A Every lens has an aperture or an opening at the front of it through which light travels—think of it as the eye of the camera. Because aperture controls how much light is passing through the lens, it has a direct affect on the photo's exposure.

Q What is a telephoto lens?

A A telephoto lens magnifies subjects that are far away from your camera's shutter; these lenses are typically larger than 50mm.

Q What's the purpose of a wide-angle lens?

A If you want to capture a subject in a broad field of view, such as a mountain range or horizon, use a wide-angle lens—less than 40mm—to create a shot that won't look cramped.

Q What type of lens is best for taking portraits and weddings?

A A standard 50mm lens is ideal for capturing both close-ups and group shots.

Q What is a macro lens?

A A macro lens lets you take photos of incredibly small objects, such as bees, flowers, and water droplets. A normal lens will typically distort a small subject, but a macro lens captures it without changing the subject's features.

Q What type of lens is ideal for taking photos of fast-moving objects?

A Snapping photos of quick-paced action depends primarily on high shutter speed and low aperture setting (a narrow opening of your lens), so look for a lens that will work with these settings.

Q Should I buy a third-party lens for my D-SLR camera?

A A third-party lens, one that is not manufactured by the same company that produced your camera, is an ideal choice for a budget-conscious shopper. A camera will most likely deliver superior results if you choose a lens from the same manufacturer.





Digital Imaging Glossary

A

re you confused about what the lingo on camera boxes means? Use this glossary to help decode the world of digital imaging.

aperture—An iris-like diaphragm opening that can expand and contract the lens to let you control the amount of light that passes through it, thus affecting the exposure. The term “f-stop” is used interchangeably with aperture.

burst mode—A camera mode that lets you capture several shots consecutively after pressing the shutter only once.

CCD—A charge-coupled device is the camera’s image-sensing component. It converts light into energy that can be stored as digital data on your camera.

depth of field—The area that is in focus in front of and beyond the subject of your photo.

digital zoom—Magnifies an image digitally by cropping it and filling in the rest with interpolated pixels, thus degrading the quality. Even if the numbers are impressive, never choose a camera based on digital zoom.

f-stop—See aperture. Smaller f-stop numbers mean a wider lens opening; larger f-stop numbers mean a narrower lens opening.

ISO—For digital cameras, the ISO setting measures the sensitivity to light (similar to how it does with film). Digital camera ISO settings, such as 200, 400, etc., should capture photos as if one were using film with such a speed. Lower ISO settings mean you need more light and vice versa.

LCD—The screen on the back of the camera that lets you see a live-action view of your subject or your photo after you’ve taken it.

lens—The apparatus on the front of the camera that gathers and directs light toward the imaging device. In a digital camera, the lens probably has both an optical and digital zoom.

megapixel—Approximately 1 million pixels. The higher the megapixel count, the higher the resolution and the more you can crop, which means (in general) better-quality photos.

memory card—Because digital cameras have very little onboard memory, they need flash memory cards to store more than a dozen or so images. The type of memory card you need depends on the make and model of your camera. Some of the most popular memory cards are Secure Digital, MultiMedia Card, Compact Flash, and Sony Memory Sticks. In general, memory cards are quite small.

noise—The small statistical variations among pixels that lead to (usually) minor distortions of color in a photo.

optical zoom—The camera’s mechanical ability to move the lens physically closer to your subject. With optical zoom, the higher the number (such as 5X or 10X), the better. When choosing a camera, always consider the optical zoom, not the digital zoom. Digital zoom artificially adds pixels.

resolution—The number of pixels in an image. The higher the resolution, the more detail and quality in a photo. Resolution is measured in a proportion (such as 2,272 x 1,704).

shutter—A mechanism that opens and closes to allow light to pass through the lens. You can usually control the camera’s shutter speed.







shutter speed—The length of time a camera’s shutter is open to let light through the lens to hit the sensor, which records the image. This is expressed in fractions of a second: For instance, a shutter speed of 1/250 means that the shutter is open for 1/250th of a second.

viewfinder—The small opening in the camera that the user looks through to frame a shot. Some digital cameras don’t have a viewfinder and use only the camera’s LCD to frame the shot.

white balance—Light levels are adjusted electronically to ensure whites in a certain environment are pure, leading to more lifelike colors. White balance can usually be manually adjusted, too. **PG**

Which Point-&-Shoot Camera Is Best For You?

If you're a little confused about the most important features in a digital camera, you're not alone. In this chart, we compare features from select digital cameras, and we also explain what these features mean.

What It Means		Resolution; Optical zoom	Shutter speed	Memory card	LCD size	Battery life	ISO	Movie mode
		More pixels mean bigger and clearer prints; Moves the lens closer to your subject	A faster shutter speed will let you snap action photos without blur	Removable card that stores your photos in your camera	The LCD is the screen on the back of the camera	Based on how many shots you can take on a single charge	A higher ISO lets you take better photos in low-light settings	Lets you record short video clips on your digital camera
	Insignia NS-DSC10B MSRP: \$99.99* SKU 9266992	10MP; 3X	1 to 1/2000 seconds	SD/SDHC	2.5 inches	N/A	Auto; Manual: 100, 200, 400, 800, 1600	Yes
	Canon PowerShot A1100 IS MSRP: \$199.95* SKU 9347405	12.1MP; 4X	15 to 1/1,600 seconds	SD/SDHC	2.5 inches	140 shots	Auto; Manual: 80, 100, 200, 400, 800, 1600	Yes
	Fujifilm J250 MSRP: \$199.99* SKU 9283223	10MP; 5X	1/4 to 1/2,000 seconds	SD/SDHC	3 inches	N/A	Auto; Manual: 64, 100, 200, 400, 800, 1600, 3200	Yes
	Samsung TL100 MSRP: \$229.99* SKU 9218713	12.2MP; 3X	1 to 1/1,500 seconds	SD/SDHC	2.7 inches	N/A	Auto; Manual: 80, 100, 200, 400, 800, 1600, 3200	Yes
	Panasonic Lumix DMC-FS25K MSRP: \$249.95* SKU 9394032	12.1MP; 5X	8 to 1/2,000 seconds	SD/SDHC/ MMC	3 inches	330 shots	Auto; Manual: 80, 100, 200, 400, 800, 1600, 3200	Yes
	Nikon S60 MSRP: \$299.95* SKU 8975157	10MP; 5X	1/1,500 to 2 seconds	SD/SDHC	3.5 inches	140 shots	Auto; Manual: 64, 100, 200, 400, 800, 1600, 3200	Yes
	Olympus Stylus Tough-8000 MSRP: \$399.99* SKU 9228374	12MP; 3.6X	1/4 to 1/2,000 seconds	xD-Picture Card/ microSD	2.7 inches	250 shots	Auto; Manual: 64, 100, 200, 400, 800, 1600	Yes
	Sony Cyber-shot DSC-HX1 MSRP: \$499.99* SKU 9327105	9.1MP; 20X	2 to 1/4,000 seconds	Memory Stick Duo/ PRO Duo	3 inches	390 shots	Auto; Manual: 125, 200, 400, 800, 1600, 3200	Yes

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Which D-SLR Is Best For You?









As D-SLR prices keep coming down, more photographers are turning to them, both as a first camera and as a trade-up to something better. In this chart, we'll help you sort through some of the features and performance specs from select D-SLR cameras.

		Resolution	LCD size	ISO range	Kit lens	Burst speed	Shutter speed
	What It Means	Image sensor in megapixels; more means a bigger image	Diagonal measure of screen on back of camera	A higher ISO range will let you take better photos in low-light situations	Standard lens bundled with the camera body	Frames per second (fps) you can shoot while in burst mode	The wider the range, the greater the gamut of long exposures to frozen action
	Nikon D60 MSRP: \$649.95* SKU 8721733	10.2MP	2.5 inches	100 to 1600	18-55mm f/3.5-5.6G VR lens	3fps	30 to 1/4,000 seconds
	Sony Alpha A330L MSRP: \$649.99* SKU 9342142	10.2MP	2.7 inches	100 to 3200	SAL-1855 DT 18-55mm f/3.5-5.6 lens	2.5fps to card capacity	30 to 1/4,000 seconds
	Nikon D5000 MSRP: \$729.95* SKU 9311755	12.3MP	2.7 inches	200 to 3200	18-55mm f/3.5-5.6G VR lens	4fps	30 to 1/4,000 seconds
	Canon EOS Rebel XSi MSRP: \$749.99* SKU 8794691	12.2MP	3 inches	100 to 1600	EF-S 18-55mm f/3.5-5.6 IS lens	3.5fps up to 53 shots	30 to 1/4,000 seconds
	Canon EOS Rebel T1i MSRP: \$899.99* SKU 9318954	15.1MP	3 inches	100 to 3200	EF-S 18-55mm f/3.5-5.6 IS lens	3.4fps	30 to 1/4,000 seconds
	Panasonic Lumix L10K MSRP: \$1,299.95* SKU 8815464	10.1MP	2.5 inches	100 to 6400	Leica D Vario-Elmar 14-50mm f/3.8-5.6	3fps to card capacity	60 to 1/4,000 seconds
	Pentax K-7 MSRP: \$1,299.95* SKU 9412165	14.6MP	3 inches	100 to 1600	N/A (body only)	N/A	30 to 1/8,000 seconds
	Olympus E-3 MSRP: \$1,399* SKU 8682776	10.1MP	2.5 inches	100 to 3200	N/A (body only)	5fps to card capacity	60 to 1/8,000 seconds

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Which Digital Camcorder Is Best For You?

Digital camcorders come in a number of formats: DVD, hard drive, flash drive, MiniDV, and high definition are the most common. By comparing the following digital camcorders, you can determine which recording format and product best fit your style.

What It Means		LCD size	Optical zoom; Digital zoom	Recording speeds	Memory card	Digital still resolution	Lines of resolution
Flash Drive	 JVC GZ-MS120BU MSRP: \$299.99* SKU 9185829	2.7 inches	35X; 800X	N/A	SD/SDHC	N/A	N/A
	 Canon FS200 MSRP: \$329.99* SKU 9239567	2.7 inches	37X; 2,000X	LP/SP/XP	SDHC	N/A	N/A
	 Sony DCR-SX60 MSRP: \$369.99* SKU 9284785	2.7 inches	60X; 2,000X	HQ/SP/LP	Memory Stick PRO Duo	N/A	720
High-Definition	 Sanyo VPC-TH1BL MSRP: \$299.99* SKU 9300641	3 inches	30X; 1,500X	N/A	SD/SDHC	2MP	N/A
	 Samsung HMX-H104N/XAA MSRP: \$649.99* SKU 9369765	2.7 inches	10X; 100X	N/A	SDHC	N/A	1080
	 Panasonic HDC-TM20K MSRP: \$599.95* SKU 9393998	2.7 inches	16X; 1,000X	N/A	SD/SDHC	2.1MP	N/A
Hard Drive	 Sony HDR-XR100 MSRP: \$749.99* SKU 9178739	2.7 inches	10X; 120X	FG/HQ/SP/ LP	Memory Stick PRO Duo	4MP	1080
	 Panasonic HDC-TM300K MSRP: \$1,299.95* SKU 9393863	2.7 inches	12X; 700X	N/A	SD/SDHC	10.6MP	N/A

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Find The Nikon COOLPIX That Fits Your Life



At the heart of the image™

Nikon's COOLPIX cameras won't let you miss the joy in life, thanks to their fast start-up time, shutter speed, and auto focus. Each COOLPIX offers an ultra-compact and stylish design that will deliver sharp and colorful photo results with its NIKKOR lens. With a wide range of Nikon COOLPIX cameras available, it couldn't be easier to find a camera that can keep up with your photography needs.

Product Name	Nikon COOLPIX L20 9220167	Nikon COOLPIX S220 9220185	Nikon COOLPIX S560 9220194	Nikon COOLPIX S230 9220201	Nikon COOLPIX L100 9220229	Nikon COOLPIX S630 9223734	Nikon COOLPIX S60 8975157	Nikon COOLPIX P90 9223743
SKU								
Additional Colors Available		9224519 9224494 9224528	9225046 9224895	9225224 9225215 9225233		9225279 9225242 9225251	8989179 8989204 8989151	
MSRP	\$129.95*	\$149.95*	\$199.95*	\$229.95*	\$249.95*	\$279.95*	\$299.95*	\$399.95*
Resolution	10MP	10MP	10MP	10MP	10MP	12MP	10MP	12.1MP
Zoom	3.6X optical; 4X digital	3X optical; 4X digital	5X optical; 4X digital	3X optical; 4X digital	15X optical; 4X digital	7X optical; 4X digital	5X optical; 4X digital	24X optical; 4X digital
LCD Size	3 inch	2.5 inch	2.7 inch	3 inch	3 inch	2.7 inch	3.5 inch	3 inch tilt and swivel LCD
Internal Memory & Compatible Cards	20MB internal & SD/SDHC	44MB internal & SD/SDHC	44MB internal & SD/SDHC	44MB internal & SD/SDHC	44MB internal & SD/SDHC	44MB internal & SD/SDHC	20MB internal & SD/SDHC	47MB internal & SD/SDHC
ISO	Up to 1600	Up to 2000	Up to 3200	Up to 2000	Up to 3200	Up to 6400	Up to 3200	Up to 6400
Shooting Modes	6 Scene Auto Selector Modes, 16 Scene Modes, plus Auto	6 Scene Auto Selector Modes, 16 Scene Modes, plus Auto	6 Scene Auto Selector Modes, 15 Scene Modes, plus Auto	6 Scene Auto Selector Modes, 17 Scene Modes, plus Auto	6 Scene Auto Selector Modes, 16 Scene Modes, plus Auto	6 Scene Auto Selector Modes, 16 Scene Modes, plus Auto	6 Scene Auto Selector Modes, 17 Scene Modes, plus Auto	16 scene modes, Programmed Auto, Shutter-Priority Auto, Aperture-priority Auto, and Manual
Movie Mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Touch-Panel Control	No	No	No	Yes	No	No	Yes	No
Battery Type	2 AA batteries	Li-Ion rechargeable battery	Li-Ion rechargeable battery	Li-Ion rechargeable battery	4 AA batteries	Li-Ion rechargeable battery	Li-Ion rechargeable battery	Li-Ion rechargeable battery
Battery Life	200 shots alkaline, 630 shots lithium ion	180 shots	160 shots	160 shots	350 shots alkaline, 900 shots lithium ion	220 shots	140 shots	230 shots

* Prices listed in this issue are for general reference and may vary from retailer pricing.

FirstGlimpse

OLYMPUS

Digital Camera Get In On The Action



Olympus STYLUS TOUGH-8000

MSRP: \$379.99

SKU: 9228374 (blue)

9225448 (silver)

9225313 (black)

www.getolympus.com

Quick Overview

The Olympus STYLUS TOUGH-8000 offers superior image quality with 12 megapixels and a 3.6X wide-angle optical zoom lens. Frame the perfect shot with the 2.7-inch LCD screen that's anti-glare equipped. Add a robust design that's shockproof, waterproof, freezeproof, and crushproof, and the STYLUS TOUGH-8000 can go where no other camera has gone before.

Perfect For

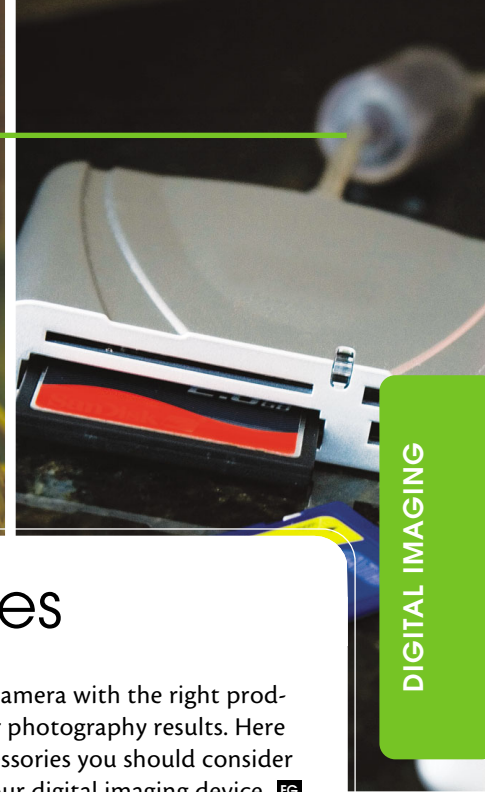
The STYLUS TOUGH-8000 is perfect for those with active lifestyles. Take this camera along for outdoor activities such as kayaking, hiking, skiing, and even snorkeling. No pastime is off-limits.

Outstanding Benefits

- Perfect for underwater use or while wearing gloves, Tap Control lets you manage picture playback, flash mode, and more by tapping the top, back, and sides of the camera.
- In-camera panorama lets you take three images and stitch them together to create breathtaking wide-angle scenes.
- Dual Image Stabilization eliminates camera shake, so you can have crystal-clear photo results in any situation.
- Switch to Beauty Mode to remove shadows and blemishes from your subject's faces.

Coollest Feature

The STYLUS TOUGH-8000 is virtually indestructible. It's shockproof up to 6.6 feet, crushproof under up to 220 pounds of pressure, and withstands going underwater down to 33 feet.



Accessories & Services

Prices for digital camcorders and cameras continue to fall as video and picture quality improve, which is especially good news for first-time buyers or those looking to upgrade. Pairing

your new camcorder or camera with the right products will bring you better photography results. Here are some must-have accessories you should consider to get the most out of your digital imaging device. **FG**

UV FILTER

- Protect digital camcorder and D-SLR lenses from dust, dirt, fingerprints, and scratches
- Get clearer, more detailed videos or photographs when you're shooting in bright conditions

TRIPOD

- Larger tripods are an easy way to ensure steady video footage
- Pan large areas while recording video in one smooth motion
- Using a tripod and your camera's timer, you can get a picture of the entire group without needing someone to man the camera
- Keep your camera steady while shooting close-up or distance shots, which can prevent photo blurring

SPARE BATTERIES/CHARGER

- Be sure you're never caught without the power needed to capture the perfect moment
- Whether your camera uses proprietary batteries or AAs, keep at least one fully charged spare or set in your camera bag
- An additional battery charger will give you the flexibility to power up your camera batteries anywhere you're headed, even if you're traveling

EXTRA MEDIA

- Keep spare memory cards on hand so you can snap away without having to worry about running out of storage space
- Consider having several smaller media cards instead of one larger card; if something goes wrong with one, you'll still have a backup
- For your digital camcorder, keep more recording media in your bag than you think you'll need, just in case

ADDITIONAL LENSES/CONVERTER LENSES

- Extra lenses for D-SLRs and converter lenses for digital camcorders can enhance your results by extending your field of view, reducing glare, and more
- Telephoto lenses enable you to zoom in from far away; wide-angle lenses give you the ability to get a full view even if you're close to the subject; and macro lenses will let you achieve up-close, detailed shots of your photo subject

EXTERNAL FLASH

- Light up your subjects from greater distances
- Offer better control of lighting conditions when shooting by directing the angle of the flash

REMOTE SWITCH

- Take pictures without having to touch the camera, which can reduce camera shake
- Longer cable lets you snap shots without being tied to the camera
- May enable the user to lock the shutter for longer exposure times

DIGITAL IMAGING SERVICES

Once you've set your sights on the camera or camcorder you want, consider taking advantage of the digital imaging services offered by your local CE retailer. Not only can you protect your imaging investment, but you can also discover photography and videography skills to make your photos and videos picture-perfect.

- D-SLR Or Camcorder Service Plan
- D-SLR Training Course
- Camcorder Training Course

How To Buy A Computer For A Student

Laptop & Desktop Education

FEATURE



As you shop for the best computer for your student, you'll start to learn there are pros and cons to using either a notebook or a desktop. Laptop users can take their computers practically anywhere and enjoy the

advantages of connecting to Wi-Fi access where it's available. However, desktops are generally less expensive and include more powerful components. No matter what each computer style has to offer, it ultimately boils down to a matter of preference. To help you with this decision, we've compiled a back-to-

school computing guide to determine what type of computer is ideal for a student of any age: elementary school, high school, or college. **FG**

BY JOANNA SAFFORD

Notebook Computers

GRADE SCHOOL STUDENTS

As young minds grow, they'll learn more computing skills. For this reason, they'll want a laptop that lets them access academic games and spend their spare time creating digital artwork in Paint. Look for an inexpensive ultraportable laptop—a small design for a small person. Plus, it's easy to slip into a book bag for spring break vacation.

Basic ultraportables shouldn't be any heavier than about 5 pounds. Look for a computer with 2GB of RAM, which is plenty of power for a small laptop, and 100GB of hard drive space, which will be more than enough room to store youth-oriented games and music.

HIGH SCHOOL STUDENTS

High school students want to stay connected to their social groups, which means they'll need a portable computer designed for Internet communication, instant messaging, and video chatting. To meet the demands of online socializing, look for a laptop that includes both wireless and wired connectivity, which will enable your student to chat while also working on homework all around the home, whether it's in their bedroom, at the kitchen table, in front of the TV, or with classmates at the library. To take a break, they can play online games at a nearby coffee shop.

It's during high school that students learn to express themselves on paper, so a word processing program is a must. You'll want to find an office or software suite that's appropriate for your student, whether they need to produce large papers for history class or create slideshow presentations for speech.

COLLEGE STUDENTS

Students leaving home for the university life are ready for new experiences—a new laptop will only serve to enhance their scholastic adventures. A high-powered notebook that features a large hard drive (more than 200GB), substantial RAM for decent processor speed (up to 6GB), and multi-card reader (for memory cards) will suit the lifestyle of almost any college student. Wi-Fi connectivity and portability are just as important for studying in the campus library and logging on to school email anytime or any place.

Not only will your college student need enough power and features for demanding programs (especially art and design students), but he'll likely want to use some downtime to listen to his MP3 collection or play the latest flicks on his laptop. A laptop with a Blu-ray Disc drive will play his favorite Blu-ray movies in HD video.

Desktop Computers

GRADE SCHOOL STUDENTS

For grade school students who are starting to apply advanced computing skills, a desktop computer can be the best learning companion. Touchpads and confined keyboards on some laptops can make it difficult for beginners, but a full-sized mouse and QWERTY board is easy for most young students to use. Desktops are ideal for younger kids who may need parental supervision to ensure that they're playing age-appropriate games and browsing kid-friendly Web sites.

In terms of the entire system, look for a basic tower that features an optical drive (for games and movies), at least 2GB of memory, and integrated (or built-in) graphics.

HIGH SCHOOL STUDENTS

A high schooler's desktop computer will function as her workstation—a place to upload photos, create school projects, and organize all things school-related. Memory-wise, 3GB is a good start for a desktop. More importantly, desktops include room to add an extra internal hard drive to store photo collections, videos, and music.

Other desktops feature wireless connectivity in addition to an Ethernet connection, which means the PC could reside anywhere in your home, even if it's not sitting near an Ethernet port. If your student plans to run multiple programs simultaneously, be sure to find a PC with a quad-core processor that can support a high level of system strain.

COLLEGE STUDENTS

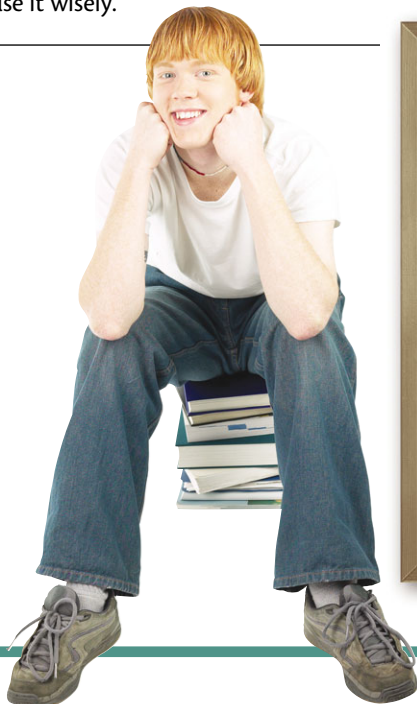
For the most part, a college student's desktop PC will reflect his or her area of study. For video or graphic design, the best choice is a PC with an advanced graphics card—adding a discrete graphics card (an additional, more sophisticated graphics card for image-heavy computing) will suffice for extensive visual-based projects. Those studying the arts and sciences should have all the power and storage they need for producing major reports and group projects. A high-end desktop system should last the duration of a student's college career.

In addition to the must-haves, a student can accessorize with a TV tuner card (a component that gives a TV signal to a PC), which enables her to watch TV on a PC monitor. This is one way to save space inside typically cramped dorm rooms.

FEATURE

YOUR PERSONAL COMPUTER

The only way to be truly satisfied with your computer purchase is to choose the model that best suits your student's needs, wants, and future use. A PC is a powerful academic tool, and by making the right choice, a student will be able to use it wisely.



Hard Drives 101: Back Up & Transfer For Safety

The contents of your PC's hard drive is undoubtedly valuable—this is especially true for students who can't afford to lose papers or presentations to a crashed drive. In order to prevent this type of disaster, be sure to add an external hard drive to your PC shopping list. External hard drives range in size from 250GB to 2TB, which is plenty of space for all forms of media.

To easily transfer media from a home (or dorm) PC to a computer at school, use a flash drive that features the common USB connector. This is also a great way to pass documents to another group project member. ●

Netbooks For Students

Connect On The Fly

FEATURE

In a nutshell, a netbook is a very small and lightweight computer that is designed for exceptional portability, long battery life, and basic computing tasks. It closely resembles a notebook, but among differences in functionality, netbooks are

usually much smaller than notebooks, making them ideal for students who need to keep a light backpack while traipsing across campus to and from classes, the library, and hangout sessions with friends.

What Students Can Do With A Netbook

A netbook can be a powerful tool for certain people, but many folks believe them to simply be tiny notebooks. The reality is that netbooks serve a slightly different purpose. Although they're ideal for portability, by no means do they replace notebooks, let alone desktop computers.

Netbooks are low-power machines, which is one of the reasons they have strong battery life, but this same feature also means graphics, memory, and processing power are considerably slower than their slightly larger siblings, notebooks. For example, don't expect to be able to edit photos or work with PowerPoint very well on a netbook.

Thus, students should use netbooks as super-portable devices that let them do basic computing tasks on the go, such as Web browsing and staying connected with friends and family via social networking sites.

Netbook Limitations

Sure, netbooks are great for some things, but you should be aware that they're not just "tiny notebooks," they're somewhat limited in functionality. For example, you can browse the Internet and work on a paper using your netbook, but you won't get far editing photos or downloading video. Plus, to cut down on weight, netbooks don't have optical drives, so you need to use an external one to watch movies or install software from a disc. ●

Internet Connectivity Options

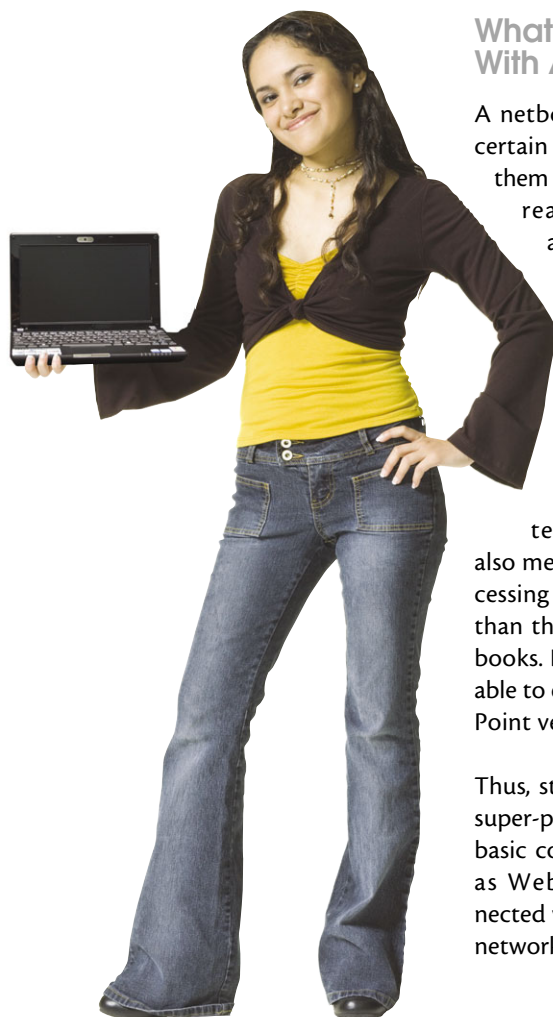
Other than their easy portability, the primary benefit of a netbook is its ability to connect to the Internet. Like notebooks, netbooks have Ethernet ports and Wi-Fi for wired or wireless Internet connectivity.

Many netbooks also boast a built-in 3G modem, enabling them to connect to the Internet via a cellular service provider's mobile network. Effectively, that means that virtually anywhere the computer can locate a cellular signal, it can connect to the Internet. Whether you're at home and have your netbook connected via Ethernet cable, using the Wi-Fi at your local coffee shop, or enjoying an afternoon of study in the park using a 3G network, you can access the Internet to check your email or look up some factoids for your upcoming history paper.

Grab It & Go

Netbooks are ideal for those on the go who need a lightweight computer to complement their full-time computer. If you find that a netbook doesn't suit your needs, check out "How To Buy A Computer For A Student" on page 38. **FG**

BY SETH COLANER



Power Rigs For Gaming & Media

What To Look For

PCs may look a lot alike on the outside, but as with everything else, it's what's inside that counts. Any PC can handle basic office programs, Web surfing, and the like, but it takes a true monster of a machine to tame the latest games and handle intensive computing tasks such as video editing. Here's what to look for when you're shopping for a PC that will let you handle any game or type of multimedia in your downtime.

Discrete video. Few people pay attention to video card type, but the only way to play the latest games and enjoy the highest-quality multimedia is to purchase a PC that has a discrete video card, which is a separate video card that has its own pool of dedicated memory. The alternative is an integrated video card, which doesn't have its own memory and robs resources from the rest of the computer, slowing the system down.

Multicore processors. Many games and multimedia applications support technology called multithreading that lets them run better on computers equipped with multicore processors, as data can be divided up and processed in parallel instead of sequentially for a serious speed boost. Look for a computer that has four or even eight CPU cores for

maximum performance, especially for working with video, which is processor-intensive.

Gobs of memory. Games and high-definition video require a lot of RAM to run smoothly, especially if you plan to run multiple programs at the same time. A machine with 3GB or more is recommended for best performance, and

ample RAM can mean the difference between glitches in high-definition video and games and silky-smooth playback.

A massive hard drive. When looking at hard drives, think terabytes (TB) instead of gigabytes (GB). Modern games and high-quality video require a lot of storage space (particularly if you plan to use the PC for video editing), so consider a 1TB drive (equivalent to 1,000GB) as a minimum for a high-performance PC.

A combo drive. Don't settle for a standard disc drive. Instead, get one that can read Blu-ray Discs, DVDs, and CDs so you're completely covered no matter what media you want to watch or listen to. Also, make sure the drive can record DVDs because a PC with all of the features listed here is perfect for editing and burning your home movies.

Monitor. Whatever you do, don't skimp on the monitor when purchasing a high-end PC. Buy the biggest widescreen display that fits in your budget, because once you have this kind of power on tap, you'll want to use it all the time. A larger monitor means more graphic detail and more desktop space to work with when editing video. Bigger is always better when it comes to displaying games and video. **FG**

BY TRACY BAKER

Don't Forget The Internet

The best PC deserves the best Internet connection, especially now that so many high-quality video streams are available from services such as Netflix and Hulu. Upgrading to your Internet provider's fastest possible option can really help you get the most out of your powerhouse PC. ●



Essential Software

Security, Backup & Online Safety

FEATURE

A back-to-school computer is only as useful as its software. It definitely needs productivity programs such as a word processor for writing all of those papers and essays. And it won't take long for most students to install iTunes, games, and other study breaks.

There's another class of software to take into consideration, however. Electronics stores call them utilities. Students call them "other stuff." We call them essential. Let's take a look at the reasons why.

Security. The Internet is amazingly useful, but it can also be dangerous. A malware infection's grim results include lost data, tardy homework, and possibly expensive repair bills. Even worse, today's spyware and other digital threats can lead to identity theft, credit rating damage, and other long-term hassles that can hobble a young adult right out of the gate.

Therefore, the first essential is an antivirus/antispyware utility with automatic protection, updating, and scanning features. (Most new PCs come with trial versions of antivirus software, but they expire after a month or two.) Be sure to buy a program with protection against rootkits as well as threats borne by instant messaging and email. An even smarter purchase is an Internet security suite,

which includes additional features such as a comprehensive firewall and licenses for use on other family computers.

Backup. Many undergrads are masters at the art of procrastination. Perhaps it's the rush that comes from a last-minute assignment completion after a fervent all-nighter. But if something bad should happen to a pupil's assignment mere hours before it's due, he'll be relieved that he made a backup copy of his work in progress. Instead of losing the entire project, he'll only have to redo the part since his last backup.

Every student needs some sort of backup for her data, meaning software that can copy important files from her computer's hard drive to another medium, such as DVD or an online storage account. This is especially true if she carries a laptop to class every day, exposing it to accidental drops and other dangers.

External hard drives and many USB flash drives come with backup software that's basic but nevertheless better than most operating systems' backup utilities. Third-party backup utilities tend to be more configurable, easier to use for recovering data, and better supported through live tech help.

Parental controls. Depending on your child's age, you might be concerned about his exposure to the Internet's more mature content. Parental control software can help block objectionable Web sites, limit Internet time, and even monitor kids' communications on social networking sites.

A back-to-school computer is all about equipping a student for success. It pays to make sure that the PC itself is equipped with the software it needs to succeed, too. **FG**

BY MARTY SEMS

Netbook Security

While it's true that today's laptops and desktops are technically leaps and bounds faster than computers five or 10 years ago, software bloat tends to erase any real-world gains. Many security utilities are as guilty of this as software and operating systems, but that doesn't make them any less essential.

When a student buys a netbook, the trick is to get protection that won't bog down its relatively light-duty processor. Look for security utilities with low system requirements and wireless protection. ●



FirstGlimpse

Choose A Printer For Your Student

Basic, Photo, Or All-In-One

Laser Printers

If you're looking for speedy document printing, laser printers typically offer faster output and crisper text than inkjet printers. That being said, laser printers generally produce poor detail with photos, and most models only print in black and white. So while a laser printer is perfect for office duties, it's a poor fit for print projects outside of text-based assignments, such as reports with images or colorful graphs. ●

The school's computer lab printer isn't an ideal place for students to print out assignments. They may need to pay a fee for every printed page, and worse, long waits, limited lab hours, and paper

jams may prevent students from being able to print papers at the last minute. With a personal printer, students can produce reports, graphs, and other schoolwork at their own convenience. Printers are available at affordable prices, and you have a variety of features

and manufacturers to choose from. Here, we'll show you what type of printer is best for your child's scholastic needs. **FC**

BY NATHAN LAKE

FEATURE

ELEMENTARY SCHOOL

Want to help your child with math, reading, grammar, or geography? You can print off practice exercises, illustrations, and maps to help develop your young one's fundamentals. A basic inkjet printer is perfect for printing quizzes and visual aids with colorful graphics, as all inkjets can create text and graphics in color. Additionally, some single-function inkjets are available for less than \$80. For example, Epson's WorkForce 30 (\$69.99; www.epson.com) is an inkjet that features Epson's DuraBrite inks that resist smudges, fading, and water damage, so fingerprints and juice spills won't ruin printed pages.



MIDDLE SCHOOL

Preteens have a variety of projects that require them to turn in a hard copy, including online research, math lessons, and papers. Additionally, some assignments, such as science fair reports, demand photos and bright, large graphs. A photo printer—which features high-quality print heads that create colorful details at a professional quality—gives your child the freedom to produce photos and eye-catching graphics as well as documents. Many photo printers offer a built-in LCD and memory card slots to let you select, edit, and print photos directly from your camera's memory card, which is great for youngsters who want to create photos for their projects without using a PC.

HIGH SCHOOL & COLLEGE

With daily assignments, papers, and other projects, a printer is one of the most useful computer accessories for high school and college pupils. All-in-one inkjet printers, which also feature built-in scan and copy capabilities, are great for group projects when students need to share materials by copying or scanning documents. For instance, Brother's MFC5890CN (\$199.99; www.brother-usa.com) features a 50-page document feeder to let you scan several pages at a time, rather than having to manually replace each page on the scanner glass. Students who also want to print photos of family and friends will appreciate the MFC5890's 3.3-inch LCD, memory card slots, and USB port.



External Storage

Back It Up & Take It With You

FEATURE

Students can keep all types of files, including term papers, book reviews, and multimedia projects, on an external storage device. And with the right portable storage option, such as an external hard drive or a thumb drive, students can also carry their essential files with them as they jet from home to the library.

Hold It On An External Hard Drive

External hard drives offer large storage capacities that range from around 100GB up to 2TB. There are different types of external hard drives, such as portable models that are approximately the size of your hand and external drives that are designed to sit next to a desktop computer. A portable hard drive will allow a student to carry large quantities of data, such as large music and photo libraries or school projects. External hard drives can be used to add additional storage to a computer, and models that offer more than 500GB can back up a computer's entire hard drive. This will help guarantee that term papers don't become victims of a sudden computer crash.

External hard drives have different connectivity options, so be sure you find a model that offers ports that fit your needs. Some drives will connect to your computer

via a USB port, while others have FireWire, eSATA, or some combination of the three. Not all computers have the same connection options, so be sure you find a device that is compatible with your computer.

Files In A Flash

Thumb drives are high-speed external storage devices that are approximately the size of a pack of gum, and they can hold all types of files, such as word processing documents, photos, and music files. Unlike hard drives, these drives use flash memory, which doesn't contain delicate parts that can be easily damaged, making them both a portable and durable storage option. Thumb drives are also more affordable than external hard

drives. This storage option allows you to access files when connected to a PC through a USB port. And thanks to their small size, you can slip one of these devices into a pocket, purse, or book bag. Although thumb drives offer less storage space than external hard drives (between 1 and 32GB), this option can suffice for a student's temporary need for storage. A 16GB thumb drive can store approximately 12,000 text documents and more than 3,000 10MP photos.

All students need the flexibility of being able to take information with them wherever they go. No matter what grade your students are in, there is a storage device that can meet their needs. **FG**

BY TESSA WARNER BRENNEMAN

How Much Hard Drive Storage Do You Need?

Depending on their education level and area of concentration, students will have varying storage capacity needs. For instance, a college student will likely need more storage than a middle school student because of the larger amount of schoolwork they have on their plate. To give you an idea of how much storage will meet your student's needs, here is a breakdown of what Western Digital's (www.westerndigital.com) external hard drive line can handle.

	6MP Photos (5MB)	4-minute MP3s (based on 128kbps bit rate)	DVD-quality Video (5.5Mbps)
250GB My Passport Essential (\$99.99)	Up to 50,000	Up to 62,000	Up to 96 hours
500GB My Passport Elite (\$169.99)	Up to 100,000	Up to 125,000	Up to 190 hours
1TB My Book Essential (\$149.99)	Up to 200,000	Up to 250,000	Up to 380 hours
2TB My Book Studio Edition II (\$349.99)	Up to 400,000	Up to 500,000	Up to 770 hours

Stay Connected

Access The Web From Almost Anywhere

Whether you're doing research, collaborating on a group project, or communicating with your professor, being a student who's connected to the Web is important. There are several methods you can use to keep in touch anytime, anywhere.

Network Needs

Establishing a network in your home or dorm room is an easy way to connect several devices, such as multiple PCs, video-game consoles, MP3 players, and printers, to the Internet without using cables. To create a wireless network, you'll need a wireless router to connect to your modem (which is generally provided by your Internet supplier). For more information on setting up a wireless network, see page 46.

Wired networks are an alternative option that offer better connection reliability and faster transfer speeds than wireless networks do. This setup requires you to connect devices to your router via Ethernet cable, but the direct connection works especially well for quick downloads or media streaming.

Another option for connecting to the Internet is with a

powerline device, which delivers Internet access to your computer using your home electrical wiring and electrical outlets. Using an adapter that plugs into the electrical outlet in your wall, your computer or Internet-compatible HDTV and Blu-ray Disc player can gain access to the Web through an Ethernet cable plugged into the powerline adapter.

Connect Anytime, Anywhere

If you prefer to work on your assignments away from home, Wi-Fi hotspots are everywhere, including coffeehouses, restaurants, public libraries, and college campuses. If your laptop has built-in Wi-Fi capabilities, it can automatically search for an available wireless connections. Depending on where you go, some hotspots will require you to enter a password and/or pay a small fee. Others are free of charge.

If Wi-Fi isn't available and you need wireless Internet access, a mobile broadband card, such as Virgin's Mobile Broadband2Go device (\$149.99; virgin-mobileusa.com), with a service plan is another option. These cards connect to 3G data network cell phone towers to access the Internet, and you can connect anywhere cell phone service is available. This is an ideal solution for areas that don't have Wi-Fi, such as in an off-campus apartment complex. **FG**

BY TESSA WARNER BRENNEMAN

Wireless Security

If you're going to take advantage of wireless Internet access, be sure your laptop is equipped with an Internet security program. This can help prevent malware, such as viruses, Trojans, worms, spyware, and other types of malicious content, from compromising your notebook. These programs will also protect you from fake hotspots and Web sites, which are becoming popular ways for cybercriminals to gather your personal information. ●

Get Networked

Wireless Possibilities For Students

FEATURE

A wireless home network can be essential for the student in your family. Whether you have a student living at home or a college student experiencing her first year in the dorms, a wireless network can provide both with a productive work environment and great entertainment opportunities.

The Benefits

Access to the Internet is almost essential for your high school or college student. However, with a wireless network, students aren't tied to their desks when using the Internet for research or when they're writing a paper and need to email their instructor to ask questions. Once their projects and papers are finished, students living at home can print their work to a wireless printer that can be placed anywhere in the home for the family to share. That way, they won't have to use up precious desk space on their own personal printer.

A wireless network can also make staying in touch with family and friends more convenient. Students can snap pictures of campus activity with their digital camera using a Wi-Fi-enabled memory card and wirelessly transfer the pictures to their computer. Students can then share pictures and videos via email or by posting them on their blog. When it's time to relax, students can invite their friends who have

gaming consoles over and wirelessly connect the device to the network to play and compete with other players online.

What You'll Need

In addition to an Internet connection, the main item you'll need for a wireless Internet network is a wireless router. After it's hooked up to an Ethernet Internet connection, the router will deliver a wireless Internet signal to network devices that have wireless Internet capabilities. Wireless routers use different wireless standards, such as 802.11a, 802.11b, 802.11g, and 802.11 Draft N. Of those standards, Draft N is the most recent with the fastest data transfer speeds. Some Draft N routers are backward-compatible with devices that use previous wireless standards, but before you purchase a wireless router, consider what types of devices your student owns, which wireless standard they are compatible with, and whether the router is backward-compatible with those devices.

Protect Your Wireless Network

It's important for your student to encrypt their wireless network. Without password protection, a network could be left open to malicious users who could intercept sensitive personal information, such as a bank account password. Students should also make sure they aren't sharing any folders over the network, so residents in the room next door can't browse their personal files. ●



Setting Up The Network

Configuring a wireless network is easy. If your student lives at home, simply connect your wireless router to your modem via the Ethernet cable that comes with your router. For dorm-bound students, most universities equip each room with an Ethernet port, so you can plug your router directly into the wall. Next, most

routers will ask you to configure settings, such as your wireless network's name and security password, via your Web browser or on-screen prompts. Consult the router's users manual for specific instructions.

Overall, setting up and configuring a wireless network is simple, and it will create endless possibilities for any student. **FG**

BY KRIS GLASER

Don't Dream It, Stream It

Move Your PC's Content To Your TV

A

dorm room is small enough before your roommate, and when you add in your media collection, you might just run out of room.

To save some space, set up your PC to stream content, such as Internet radio, TV programming, movie rentals, and even documents and presentations, to your TV. In this article, we'll tell you what you need for your very own setup.

Get Connected

Your dorm room will likely already have some kind of Internet access, which is essential for streaming content. You will also need your computer and a streaming device, which we'll address in the next section. Both your computer and streaming device must be connected to the Internet for your setup to work, either through a wired connection (such as an Ethernet cable) or a wireless connection (connected via Wi-Fi). If you have a wired connection but want to create a wireless network to stream your content, check out page 46 for more info.

Move Your Media

Once you're connected to the Internet, you have a few choices of streaming hardware. One option is a media extender, which is a device that can access and stream content from your PC to your TV via your home network. These

devices don't have internal storage for your media; instead, they take the content already stored on your PC, such as photos, movies, and music, and send it over the network to your TV. Depending on what kind of video-game console you own, it might also offer the same type of media extender functionality.

You'll need to connect the media extender to your home network, either wirelessly or with an Ethernet cable. Then you'll need to connect it to your TV with either an HDMI or a Component cable. Install the included software on your PC and choose what content you want to share over the network. The streaming software will offer menus on your TV, such as Music or Photos, and with the streaming device's remote, it's easy to play, pause, and rewind the media.

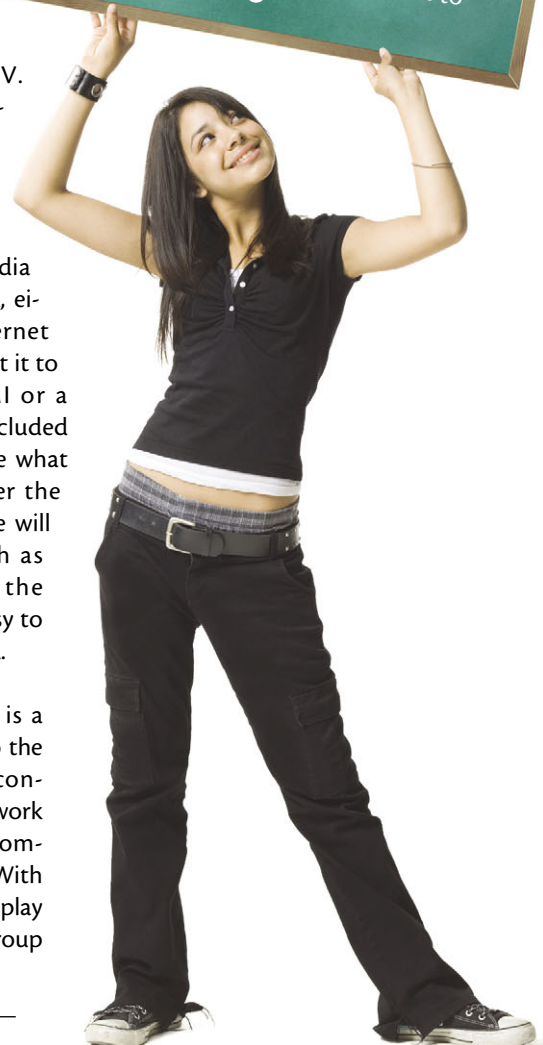
Another option for streaming is a wireless A/V kit, which plugs into the USB port on your HDTV and connects to your wireless home network to stream the display of your computer onto your home theater. With PC video on your TV, you can display projects and presentations for group work on the big screen. **FG**

BY NATHAN LAKE

Access Movies & TV Shows

If you have a Netflix subscription, you can stream movies on demand from either Netflix.com or from the instant access feature on select video-game consoles. Or, if your favorite TV show is on during your night class, you can catch it via a video-sharing Web site and stream it to your TV so you don't have to watch it on your computer. ●

FEATURE



A Plethora Of Peripherals

Add-On Devices For PCs & Notebooks

FEATURE

Consider an ice cream sundae without the hot fudge, peanuts, caramel, and other fixings. What's left? Pretty much a vanilla experience—literally. A PC or notebook sans mouse, keyboard, digicam, printer, and other peripherals presents essentially the same scenario—substance but less flavor. For students craving some zest, the following peripherals can suffice.

If It's Input You Seek . . .

Over time, keyboards and mice often become more than input devices; they become extensions of a user's personality and needs. An ideal fit might mean an ergonomic mouse designed to ward off repetitive stress injuries; a super-sensitive, fast laser mouse, such as Razer's Mamba (\$129.99; www.razerzone.com), created for use with PC games; or a backlit keyboard, such as the Razer Lycosa (\$79.99; www.razerzone.com), which is great for nighttime use and adding flair to a computing setup. For college students shuffling among a dorm room, lab, lectures, and part-time job, a travel-friendly laptop mouse with wireless connectivity via Bluetooth or RF (radio frequency) offers an alternative to a notebook's touchpad.

An Eye On Images

Though all peripherals theoretically input

data, some specialize in exchanging data, be it class notes, a group project, or even the lowdown on the school's new kid. Here, digicams and Web cams are staples. While an expensive D-SLR camera can aid budding photojournalists or artists with professional aspirations, more affordable point-and-shoot models can document a field trip, snap on-the-spot shots for the student newspaper, or ably upload images to social networking sites such as Facebook. Models geared toward grade schoolers, meanwhile, start at less than \$30 and are great for learning the ins and outs of digital photography. For students who have notebooks without an integrated Web cam, standalone models start at less than \$20, which can capture still images, include fun special effects, and support video chats.

Let Your Voice Be Heard

In line with Web cams are headsets that make video chats and free VoIP (Voice over Internet Protocol) long-distance phone calls possible. Headsets are also handy for those stress-relieving World of Warcraft sessions and other online games to talk with those you're playing with in real time. USB-enabled joysticks, steering wheels, and game pads are other examples of game-centric peripherals. For dorm dwellers, noise-canceling and sound-isolating headphones can block noisy distractions, while stereo speakers can output audio from Hulu.com or YouTube.com videos from a notebook. **FG**

BY BLAINE FLAMIG

Plug Into USB

USB ports are the prime means for attaching peripherals to computers, and there's no shortage of devices that use the entryway. A thumb drive, also known as a flash memory stick, for example, makes transferring a PowerPoint presentation from home to class a breeze, while a USB Bluetooth adapter can let a student listen to an audio book on her computer via wireless Bluetooth headphones. USB KVM switches, meanwhile, enable future software developers to control multiple computers with one keyboard, mouse, and monitor. Finally, when all of a computer's USB ports are exhausted, a USB hub can add up to seven more ports to make attaching even more peripherals possible. ●



FirstGlimpse

Uninterruptible Power Supplies

Battery Backup & Data Loss Prevention For Your PC

If there's an electrical surge or spike caused by a lightning strike, a surge protector can help prevent damage to your computer's hardware. But what can you do to prepare for a power outage? Adding a UPS (uninterruptible power supply) to your computer will keep your system running after the power has gone out, giving you time to save and shut down.

What Is A UPS?

Also known as battery backups, UPSes are a secondary power source that can keep your computer continuously powered in the event of a blackout. Without the protection a UPS provides, a sudden power failure could cause you to lose any unsaved documents. However, by connecting a UPS to your PC via a USB or RS-232 serial port, your computer will remain powered long enough for you to save the progress you've made on projects and properly shut down your system. By turning off your PC with a normal shutdown procedure, you will be putting less stress on your computer's components, such as the processor and motherboard, and this helps avoid further damage.

The amount of backup time offered by a UPS can vary, but most models average backup times of one to two hours. The exact time depends on what type of devices you have connected to your computer. If you have a desktop computer with demanding components, such as a high-end video card, it will use the UPS' reserve power more quickly than a

What Sets Surge Protectors & UPSes Apart?

Surge protectors and UPSes may seem to be one and the same, but these devices do have their differences. Plugging your computer into a surge protector will help protect it against sudden power surges and spikes, as it will act like a sponge and absorb and prevent electrical current increases from reaching and damaging the devices you have plugged into it. However, unlike a UPS, a surge protector won't continue to supply power to your devices after a voltage spike. The lack of uninterruptible power makes your computer and its components vulnerable to data loss and damage after an improper shutdown ●



FEATURE

lower-power computer would. Even though some UPSes offer longer backup periods, a UPS is not meant to be used as a generator. You should use the allotted time to save your work and properly shut down your computer.

UPSes come in different forms, such as upright towers or power strips with multiple outlets that look like surge protectors. Depending on how much room you have and how many devices you need to plug into the UPS, you may find that one UPS' build is better-suited for your computer's setup.

UPS Features

In addition to providing secondary power to your computer, many UPS models include an AVR (automatic voltage regulator) feature, which normalizes the

voltage running to your computer so that it's neither too high nor too low. AVRs also act as a power conditioner to provide clean power to your computer.

If a power outage occurs while you're away from your computer, a UPS will operate without any effort on your part, thanks to auto-shutdown software. In your absence, the UPS will automatically save your PC's data and shut down your system, keeping your files and hardware safe from harm.

By adding a UPS to your computer setup, you will protect your PC investment from the most common power-related problems, such as power spikes or blackouts, all while having enough battery power to shut down your system correctly. **FG**

BY KRIS GLASER

Bags That Are No Longer For Books

Make Room For Electronics

FEATURE

Students are still carrying bags to school as they have for as long as we can remember. Today, of course, portable electronics make up much of the cargo.

In fact, "book bags" today are largely made for laptops and other gadgets first and books second. Padded compartments with straps keep notebook computers safe from bumps and bruises,

while generous pockets keep cell phones, power adapters, and other essentials ready to hand. If you're in the market for a back-to-school bag, read on. We'll give you the CliffsNotes version of what's out there.

Bags 101

In most cases, the size of your laptop is the main criterion that will guide your purchase and, more specifically, the size of its screen. Notebook bags (and general purpose bags that also happen to have padded notebook compartments) are sold according to the sizes of the laptops they can hold, and the standard reference for that is the diagonal screen size, such as 15.4 inches or 17 inches. Moreover, many notebook compartments are adjustable, so you can customize the fit to keep your laptop or netbook securely in place. Note that bags marketed for particular laptop models may fit other notebooks, as well.

A backpack is probably the most popular style of school bag, especially at the college level. There is a wide array of backpacks with cushioned laptop pouches, some of which are removable. Besides leaving your hands free and being ergonomically comfortable to wear, a backpack may have easily

Accessory Bags And Mobile Device Cases

Other cases are available for your external backup drive, memory cards, discs, and other items. Phones, like MP3 players, can benefit from the protection of a model-specific case. Whatever you need to carry to class, make sure to buy a durable bag that gives you good value for your money. ●

accessible pockets for cell phones and other devices.

A messenger bag is a practical choice, as well. Being softer than a briefcase and sporting a shoulder strap, this type of bag can serve a pupil well. Much less desirable is a roller-style notebook bag, which might be perfect for air travel but ill-suited to crowded school corridors.

If you're traveling light, you can still protect your notebook or netbook. A laptop sleeve is a slim sheath that's open on one end. Slip your notebook into the sleeve, then secure it with a strap or other mechanism. Sleeves typically have thin but effective padding. As long as you don't need to carry an AC adapter or other sizable accessories, a sleeve may be all you need.

As you shop, ask to try out various bags to see how comfortable they are to carry and wear. **FG**

BY MARTY SEMS



Incase 13-inch
Neoprene Sleeve for
MacBook
\$34.95
www.goincase.com

FirstGlimpse

Brother MFC-255cw Wireless
Inkjet Multi-Function Center
\$99.99 estimated street price
www.brother-usa.com

Brother MFC-255cw Affordable Wireless Inkjet All-in-One Printer

Smart, Simple & Convenient

We're all looking for high-quality devices that are easy to use but won't empty our wallet. The Brother MFC-255cw Color Inkjet Multi-Function Center (\$99.99 estimated street price; www.brother-usa.com) combines simplicity and affordability with premium results to deliver a four-in-one device for your home office or dorm room. With the MFC-255cw, you'll have a wireless printer, copier, fax machine, and scanner all wrapped into one device that can also print vibrant borderless photos for less than \$100.

Quick & Easy

The MFC-255cw features built-in 802.11b/g wireless networking capabilities, which after an effortless setup, will allow you to conveniently print documents from anywhere in your house or dorm room. This will let you or anyone else to work on projects anywhere in the home and print documents to the MFC-255cw in a central location. If you're in a rush to deliver a project to your pro-

fessor on time, the MFC-255cw also provides you with up to 30ppm (pages per minute) print speed for black-and-white documents and up to 25ppm for color printouts.

More Time At Home

If you've cut back on late hours spent at the office to work at home instead, the MFC-255cw will give you what you need to get the job done. To burn the midnight oil to get your business reports to your workgroup on time, the fax machine features 40 speed-dial locations

and 90 broadcast locations. You can also scan documents to use as email attachments or media card files.

When the work is done and you're ready to print your summer vacation photos, all you have to do is insert your camera's memory card into the media card slot. Then, your photos will print without the need to turn on or connect to your computer. You'll get borderless 6,000 x 1,200 dpi (dots per inch) photos to be framed or cherished in your family photo album.

Four Individual Cartridge Ink System

The Brother MFC-255cw is ideal for anyone on a budget who wants a high-quality all-in-one device. The four-cartridge ink system provides vibrant colors and crisp printouts, and because you only need to change one ink cartridge at a time, it can help you save money.

Simplicity, affordability, and premium results are three characteristics that can be hard to find in a single product. The MFC-255cw, which is only at Best Buy, provides everything you need to complete your work at home. **EG**

Four Is Better Than Three

Many budget-priced all-in-one devices only include printing, scanning, and copying capabilities, making them three-in-ones. However, the Brother MFC-255cw gives you the added benefit of a fax machine, making it a productive four-in-one that won't cost you an arm and a leg. ●

FirstGlimpse

Essential

THINGS TO KNOW

VIDEO CARDS

Q What is a video card?

A video card, which is also known as a graphics card, is the computer component responsible for transferring image data to your computer monitor to display.

Q What does Crossfire mean?

A Crossfire refers to the ability to combine two or more ATI video cards together to achieve better video and speed performance, especially for playing graphics-intensive computer games.

Q What is video card memory, and how much do I need?

A Video card memory is reserved specifically for graphics tasks, so your computer's main memory can be used for other applications. While 256MB is sufficient for basic graphics needs, more intense uses such as video games or video editing may require up to 1GB or more.

Q Should I upgrade my video card?

A You should upgrade your video card if there is a problem with your current card or if you plan to play graphic-heavy computer games, watch movies, or perform extensive editing on photos or home movies and your current card isn't up to these tasks.

Q What is the difference between 16- and 32-bit video cards?

A In video cards, the number of bits refers to the amount of color that the video card can display: 16-bit cards can display more than 65,000 colors, whereas 32-bit cards can display 16.7 million colors.

Q What do PCI, AGP, and PCI-E mean?

A PCI (Peripheral Component Interconnect), AGP (Accelerated Graphics Port), and PCI-E (Peripheral Component Interconnect Express) are the three main types of video cards. Each video card type corresponds to a special slot on your computer's motherboard, and each motherboard will accept only one type of card. PCI-E is the newest, fastest, and most common type of video card.

Q What will I need to know about my system in order to get the right video card?

A Your new video card should be compatible with the slot on your motherboard, such as PCI, AGP, or PCI-E, and should support the resolution of your computer's monitor, such as 1,600 x 900. Your power supply should also have enough wattage to power the video card.

Q What does SLI mean?

A SLI (Scalable Link Interface) refers to the practice of combining two or more Nvidia video cards to enhance video quality and speed of graphics processing. Not everybody needs two cards, but if you play the most graphically intense video games, you may want to use more than one video card. Be sure to consider how you will be using your computer before buying a card with SLI capabilities.

Q How can a video card enhance my computer?

A A video card can enhance the visual quality of the games and movies you play and boost your computer's overall performance, as video cards have their own memory and your computer's main memory won't be shared for graphic-heavy tasks.



Computing Glossary



hopping for a computer can be intimidating, especially with all of the complex terminology. Here, we explain some common computer jargon.

Bluetooth—A short-range wireless standard that connects devices such as computers, printers, PDAs, and digital cameras so they can be used together without being connected physically with a cord.

broadband—Network connections that transmit high-speed Internet access. Broadband speed varies depending on the provider. Cable companies offer speeds of around 8 to 11Mbps, whereas phone companies offer DSL (Digital Subscriber Line), which supports speeds of 3 to 5Mbps.

CRT (cathode-ray tube)—An old analog display technology for TVs and computer monitors. It features an electron gun illuminating phosphor dots that line the inside of a glass tube. When the phosphors are lit, they display on-screen images. CRTs consume a great deal of power and are heavy and bulky. Many CRTs support digital signals, though these degrade when converted to analog.

dual-core processor—This integrated circuit, which controls the computer, features two processors, each with its own cache, on a single die or chassis. In a dual-core configuration, the operating system has two processors to handle instructions, speeding up the computer and its ability to multitask.

Ethernet—A widely used LAN protocol in which computers and networks are physically linked with a cord.

firewall—Hardware or software that limits access by a network or another outside source to your computer; it also may limit your computer's access to the network. These security measures are designed to protect your computer from outsiders who'd like to exploit it in some way. By the same token, firewalls may prevent infected files on your computer from accessing the larger network and spreading the problem to other users.

LAN (local-area network)—A group of computers that are physically connected by wires so they can communicate with one another and share information.

LCD—Liquid-crystal display technology sandwiches liquid crystals between thin sheets of glass. The crystals twist and untwist to allow and block light from a backlight, forming the images you see. LCDs are thinner, lighter, and consume less power than CRTs. Initially used mostly in notebook PCs, you'll now find LCD TVs and computer monitors, and they are also in digital cameras, cell phones, portable DVD players, and PDAs, among others.

office suite—Productivity software, such as Microsoft Office, StarOffice, and OpenOffice, that often includes word

processing, spreadsheet, presentation, database, and financial tools.

operating system—The software, such as Windows XP, Windows Vista, or Mac OS X, that controls a computer and its peripherals and serves as the primary interface for the users.

processor—Also known as a microprocessor or the CPU, this integrated circuit controls the computer.

RAM—Random-access memory is a standard type of memory that's read from and written to by the CPU and hardware.

upgradeable—This term refers to the ability to add or swap out hardware to boost a computer's performance, increase its speed, or replace a defective or obsolete device or component. For instance, you may add more memory, replace an old CRT with a widescreen LCD, or swap out an older video card for a newer one that features an ATSC TV tuner so you can watch digital TV on your computer. Look for a computer with expansion slots or empty bays.



Which Netbook Is Best For You?

Netbooks don't offer the full capabilities that notebooks do, but these compact devices are ideal for those who need to stay connected while on the go. To find the netbook that fits your mobility needs, here's a comparison of the latest models.

		Operating system	Processor	Hard drive size; RAM	Graphics card	Memory card reader	Ports
	What It Means	The software (usually Windows XP or Linux) that controls your PC	Chip that controls the computer (typically, a bigger number is better)	How much data the computer can hold; Memory that's read and written to	Controls the quality of the video and images you see on-screen	Slots that can read media cards without a separate peripheral	Sockets that give your computer access to different peripherals
	Dell Inspiron Mini 10 MSRP: \$349.99* SKU 9383918	Windows XP Home	1.6GHz Intel Atom	160GB; 1GB	Intel Graphics Media Accelerator 500	SD/MMC/MS	3 USB
	Toshiba Mini NB205-N210 MSRP: \$349.99* SKU 9371618	Windows XP Home	1.66GHz Intel Atom	160GB; 1GB	Intel Graphics Media Accelerator GMA950	SD/SDHC/MMC	3 USB
	Compaq Mini 110c-1040DX MSRP: \$389.99* SKU 9376953	Windows XP Home	1.6GHz Intel Atom	16GB; 1GB	Intel Graphics Media Accelerator 950	SD/MMC/MS/xD-Picture Card	3 USB
	Gateway LT3114u MSRP: \$399.99* SKU 9396824	Windows XP Home	1.2GHz AMD Athlon 64	250GB; 2GB	ATI Radeon X1270	SD/MMC/MS/xD-Picture Card	3 USB; 1 VGA
	Asus 1008HA Eee PC MSRP: \$429.99* SKU 9386808	Windows XP Home	1.6GHz Intel Atom	160GB; 1GB	Intel Graphics Media Accelerator 950	SD/SDHC/MMC	3 USB
	HP Mini 1153NR PC MSRP: \$449.99* SKU 9350506	Windows XP Home	1.6GHz Intel Atom	16GB; 1GB	Intel Graphics Media Accelerator 950	SD/SDHC/MMC	2 USB
	Samsung 310 MSRP: \$479.99* SKU 9365518	Windows XP Home	1.6GHz Intel Atom	160GB; 1GB	Intel Graphics Media Accelerator 950	SD/SDHC/MMC	3 USB
	Sony VAIO Lifestyle Netbook MSRP: \$899.99* SKU 9210025	Windows Vista Home Basic	1.33GHz Intel Atom	60GB; 2GB	Intel Graphics Media Accelerator 500	SD/SDHC/MMC/MS Duo	2 USB

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Which Notebook Computer Is Best For You?









A notebook computer is a pretty big purchase for most people, and it's usually a bit overwhelming, too. This chart compares the features and specs from several different types of notebook models.

		Operating system	Processor	Hard drive size; RAM	Screen size	Dimensions; Weight	Optical drives; Media card reader
	What It Means	The software (usually Windows or Mac OS X) that controls your computer	Chip that controls the computer (typically, a bigger number is better)	How much data the computer can hold; Memory that's read and written to	The diagonal measurement of the notebook's screen	Height x width x depth; How much the laptop weighs	Drives that can read and write discs; Slots that read media cards without a separate peripheral
	Acer 5516 MSRP: \$299.99* SKU 9396851	Windows Vista Home Basic	1.6GHz AMD Athlon	250GB; 2GB	15.6 inches	1.6x14.7x9.7 inches; 6 pounds	Double-layer DVD±RW/CD-RW; Yes
	Compaq Presario CQ60-417DX MSRP: \$399.99* SKU 9375936	Windows Vista	2.2GHz Intel Celeron 900	160GB; 3GB	15.6 inches	1.7x14.9x9.9 inches; 6.6 pounds	Double-layer DVD±RW/CD-RW; Yes
	Dell Inspiron 14 MSRP: \$599* SKU 9387111	Windows Vista Home Basic	2GHz Intel Pentium Dual Core T4200	250GB; 3GB	14 inches	1x13.3x9.4 inches; 4.96 pounds	DVD±RW/CD-RW; Yes (optional)
	Asus U81A MSRP: \$649.99* SKU 9382535	Windows Vista Home Premium	2.1GHz Intel Core 2 Duo Mobile	320GB; 4GB	14 inches	1.3x13.8x9.6 inches; 4.7 pounds	Double-layer DVD±RW/CD-RW; Yes
	Toshiba Satellite A505-6965 MSRP: \$859.99* SKU 9371556	Windows Vista Home Premium	2GHz Intel Core 2 Duo Processor P7350	500GB; 4GB	16 inches	1.43/1.61x15.1x10.2 inches; 6.48 pounds	Double-layer DVD±RW/CD-RW; Yes
	HP Pavilion dv6-1260se MSRP: \$919.99* SKU 9398396	Windows Vista Home Premium	2.3GHz AMD Turion X2 Dual-Core	500GB; 4GB	15.6 inches	1.33/1.61x14.9x10.15 inches; 6.47 pounds	Double-layer DVD±RW/CD-RW; Yes
	Sony VAIO MSRP: 1,199.99* SKU 9370502	Windows Vista Business	2.1GHz Intel Core 2 Duo	320GB; 4GB	13.3 inches	1.3x12.4x9.2 inches; 4.4 pounds	Double-layer DVD±RW/CD-RW; Yes
	Apple MacBook Pro MSRP: \$1,199* SKU 9375115	Mac OS X 10.5 Leopard	2.26GHz Intel Core 2 Duo	160GB; 2GB	13.3 inches	0.95x12.78x8.94 inches; 4.5 pounds	Double-layer DVD±RW/CD-RW; Yes

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Which Desktop PC Is Right For You?

When you shop for a desktop PC, you'll see lots of similar deals. The comparison chart below shows how subtle—yet important—the differences can be. If you need further help discerning the differences among these desktops, we suggest you consult an associate at your local CE retailer.

		Processor	Hard drive size; RAM	Optical drives	Operating system	Graphics card	Ports
What It Means		Chip that controls the computer (typically, a bigger number is better)	How much data the computer can hold; Memory that's read and written to	Drives that can read and write CD-Rs, DVD-RWs, or HD discs	The software (usually Windows or Mac OS X) that controls your computer	Controls the quality of your video and images	Sockets that give your computer access to different peripherals
	eMachines ET1810-01 MSRP: \$299.99* SKU 9352381	1.6GHz Intel Celeron 420	160GB; 2GB	Double-layer DVD±RW/CD-RW	Windows Vista Home Basic	Nvidia GeForce 7050	6 USB
	Acer Aspire X1300-U1801A MSRP: \$349.99* SKU 9361148	2.4GHz AMD Athlon X2 7450	320GB; 3GB	Double-layer DVD±RW/CD-RW	Windows Vista Home Premium	Nvidia GeForce 8200	9 USB; 1 FireWire
	Compaq Presario CQ5110Y MSRP: \$369.99* SKU 9371869	2.5GHz Athlon X2	320GB; 3GB	Double-layer DVD±RW/CD-RW	Windows Vista Home Premium	N/A	6 USB
	Dell Inspiron 545 MSRP: \$719.99* SKU 9361184	2.33GHz Intel Core 2 Quad	1TB; 8GB	DVD±RW/CD-RW	Windows Vista Home Premium	ATI Mobility Radeon HD 3450	6 USB
	Gateway DX4300-03 MSRP: \$749.99* SKU 9361022	2.4GHz AMD Phenom X4 9750 Quad Core	1TB; 8GB	Double-layer DVD±RW/CD-RW	Windows Vista Home Premium	ATI Radeon HD 4650	8 USB; 1 FireWire
	HP Pavilion Elite e9120y MSRP: \$839.99* SKU 9366553	2.6GHz Phenom II X4-910	1TB; 8GB	Double-layer DVD±RW/CD-RW	Windows Vista Home Premium	Radeon HD4350	4 USB; 1 FireWire
	Asus CG5290-BP007 MSRP: \$1,229.99 SKU 9366642	2.66GHz Intel Core i7	1TB; 9GB	Double-layer DVD±RW/CD-RW	Windows Vista Home Premium	Nvidia GeForce GTX260	8 USB; 1 FireWire
	Apple iMac MB418LL/A MSRP: \$1,499* SKU 9100992	2.66GHz Intel Core 2 Duo	640GB; 4GB	Double-layer DVD±RW/CD-RW	Mac OS X 10.5 Leopard	Nvidia GeForce 9400M	4 USB; 1 FireWire

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Software Listings

Get More Out Of Your PC

Computers can be used to create greeting cards, play games, balance your checkbook, and more. The thing is, most of these functions aren't available straight out of the box. To fully harness your computer's potential, you'll need to buy software. Here are some options.

Art/Illustration/Graphics



Corel Paint Shop Pro Photo X2 Ultimate
\$99.99*
www.corel.com

Professional photo-editing software in an easy-to-use package. The Ultimate version also comes with a bonus pack loaded with free extras.



Adobe Photoshop Elements 7
\$99.99*
www.adobe.com

Photoshop Elements 7 from Adobe makes it easy to fix red-eye, combine photos for the perfect group shot, or tweak the color balance to make your photos look their best.



Roxio Creator 2009
\$99.99*
www.roxio.com

With Roxio's Creator 2009, preserving your memories has become simpler than ever. You can now easily edit and touch up your photos, create unique DVDs using your home movies, and organize your music collection.



Broderbund The Print Shop 23 Deluxe
\$49.99*
www.broderbund.com

Easily create banners, business cards, letterhead, calendars, photo greeting cards, invitations, and more right from your computer with The Print Shop 23 Deluxe from Broderbund.

Audio/Video



Pinnacle Studio Ultimate Version 12
\$129.99*
www.pinnaclesys.com

Use automated and powerful video- and audio-editing tools to create and share your home movies, even in HD.



Apple iLife '09
\$79*
www.apple.com

Use Apple's popular iPhoto, iMovie, iWeb, GarageBand, and iDVD on your Mac to organize photos, create a Web site, record music, or edit movies.



Cakewalk Music Creator 5
\$34.99*
www.cakewalk.com

A user-friendly interface lets you bring your music to life and give it a professional sound. You can record, transcribe, and print your very own music.



Apple Final Cut Express 4
\$199.99*
www.apple.com

A drag-and-drop interface provides seamless movement between editing, trimming, and adding effects to your videos. The software is compatible with popular HD formats, including HDV and AVCHD.

Business Applications



Microsoft Office Ultimate 2007
\$679.95*
www.microsoft.com

Use all of today's most popular business office applications—Excel, PowerPoint, and Word—plus Office Groove, InfoPath, OneNote, Access, Publisher, and Outlook to complete a project of any size or complexity.



Adobe Acrobat 9 Standard
\$299*
www.adobe.com

Easily create, combine, and manage various PDF documents. The new version also includes a Form Wizard and commenting tools.



Intuit Quicken Home & Business 2009
\$99.99*
www.intuit.com

Manage your money and your bills with ease—keep track of your accounts and set alerts to remind you of due dates. You can also save money through Quicken Picks' online coupons and discounts.



Smith Micro Software VMware Fusion 2
\$79.99*
www.vmware.com

Use VMware Fusion 2 to run Windows applications on your Intel-based Mac, giving you greater freedom and productivity.

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Games/ Entertainment



2K Games Sid Meier's Civilization IV: The Complete Edition

\$39.99*

www.2kgames.com

Get the complete Civilization IV experience with the DRM-free version of classic Civilization IV plus three expansions.



Her Interactive Nancy Drew Dossier

\$19.99*

www.herinteractive.com

You, as Nancy Drew, go undercover on a movie set to investigate a Hollywood-style mystery. Uncover who is behind suspicious press leaks and production accidents with Nancy's sleuthing skills. Earning points during the game reveals an alternate ending.



Electronic Arts The Sims 3

\$49.95*

www.ea.com

Create your very own Sims. Customize their personalities, appearances, and homes, then send them out into the world to explore the neighborhood and meet new friends.



Enlight Restaurant Empire II

\$19.99*

www.enlight.com

The sequel to Restaurant Empire takes you further into the culinary universe, where managing a restaurant isn't always a picnic. Includes new restaurant themes, categories, and more.

Home Productivity



Nuance Dragon NaturallySpeaking 10 Preferred

\$199.99*

www.nuance.com

Dictate emails, reports, and documents much faster than you can type by letting Dragon NaturallySpeaking do the typing for you. The software has an accuracy rate of up to 99%.



Apple MobileMe

\$99*

www.apple.com

MobileMe, Apple's

Internet service, lets you keep your email, contacts, and calendar up-to-date across your iPhone, iPod touch, Mac, and PC. It also lets you store and share documents online via iDisk, and you can manage everything online through a suite of Web applications at www.me.com.



Microsoft Streets & Trips 2009

\$39.95*

www.microsoft.com

Heading out on a road trip? Use Streets & Trips to plan your adventure and share your travel plans with friends and family who will be joining you on the journey.



Susteen Data Pilot Backup & Sync Kit (LG)

\$24.99*

www.datapilot.com

Back up and sync your cell phone memory to your computer with a backup and sync kit. Kits for other phone manufacturers are also available.

Security/ Utilities



Kaspersky Labs Internet Security 2009

\$79.95*

www.kaspersky.com

Premium protection that's updated hourly to keep your system safe from even the most recent threats.



Kaspersky Labs Anti-Virus 2009

\$59.99*

www.kaspersky.com

Kaspersky's Anti-Virus 2009 has added an advanced antivirus engine that increases scan times, giving you even better protection against viruses, Trojans, worms, spyware, adware, and more.



Webroot Software Spy Sweeper With AntiVirus

\$49.99*

www.webroot.com

Protect up to three computers from viruses and spyware. Spy Sweeper stops both known and potential threats by blocking suspicious activity, and everyday updates give your computer ongoing protection.



Trend Micro AntiVirus + AntiSpyware 2009

\$39.95*

www.trendmicro.com Automatic scans, updates, and outbreak alerts make it easy to safeguard data and files. Protects against viruses, worms, spyware, and Trojan horses, keeping your personal data safe.

Backup/ Recovery



Symantec Norton Ghost 14.0

\$69.99*

www.symantec.com

Back up your entire computer or select specific files for backup to ensure you're able to recover from any unforeseen events, such as a crash or virus attack.



iolo System Mechanic

\$49.95*

www.iolo.com

With System Mechanic, you can find and fix errors and fragmentation on your PC, clean out clutter, and optimize your system for best performance.



Acronis True Image Home 2009

\$49.99*

www.acronis.com

With just one click, you can rest assured that your computer—operating system, files, applications, settings, and all—is backed up, so you can quickly recover from a crash.



iolo DriveScrubber

\$29.95*

www.iolo.com

When it's time to get rid of your old computer, use DriveScrubber to ensure all your personal data has been deleted. DriveScrubber will wipe your entire drive, including free space, and restore damaged drives.



External USB Sound Card 3D Audio On The Go



Creative Sound Blaster X-Fi Go!

MSRP: \$49.99

SKU: 9149977

www.us.creative.com

Quick Overview

Employing the premium audio technology of EAX Advanced HD technology, the Creative Sound Blaster X-Fi Go! boosts the audio in your gaming experience with a new aural sophistication. This portable sound card can give you the competitive advantage over your opponents at LAN parties by helping you detect the enemy early on, and Xtreme Fidelity produces impressive audio by enhancing the quality of your compressed music files.

Perfect For

Any gamer who thrives on an intense 3D audio experience.

Outstanding Benefits

- The Creative Sound Blaster X-Fi Go! requires no installation; all drivers are already included in the USB drive
- 3D surround sound provides realistic sound effects
- Use the 1GB flash memory to store gaming profiles, add-ons, or other media
- Compatible with USB-enabled laptop and desktop computers
- Includes a microphone jack for clear voice chatting during gameplay
- Supports both headphones and speakers
- Ideal for the more than 400 games that feature Creative EAX Advanced HD sound quality, so you can enjoy quality gaming audio

Coollest Feature

Creative ALchemy transforms your Vista gaming audio into XP-like surround sound.

SanDisk®

Flash Drive Portable, One-Touch Data Backup



SanDisk Ultra Backup 16GB USB 2.0 Flash Drive

MSRP: \$99.99

SKU: 9254335

www.sandisk.com

COMPUTERS

Quick Overview

The SanDisk Ultra Backup USB Flash Drive makes data backup a quick and convenient task. With the touch of a button, you can easily back up your vacation photos, home movies, business documents, and music collection, while also protecting your files with a password and AES (Advanced Encryption Standard) hardware-based encryption.

Perfect For

Those who are looking for a USB flash drive that can store everyday files, back up vital documents, and keep data secure.

Outstanding Benefits

- Automatically encrypts data so your files stay private and secure.
- Monitor the status of your backup with the amber-colored LED, which indicates whether the drive is transferring data or just ready to read and write data.
- Compatible USB storage with PCs and Macs.
- Use the Backup USB for PCs anywhere. There are no connection cables or activation software to load.
- Dynamic sliding mechanism exposes the USB connector when needed and protects it when not in use.

Coollest Feature

The 16GB* version of the SanDisk Ultra Backup USB Flash Drive can hold approximately 4,800 10MP photos, 4,000 songs (3.5-minute MP3s), 14,500 office files, and 32 hours of H.264 Video (at 768kbps).**

* 1 gigabyte (GB) = 1 billion bytes. Some capacity not available for data storage.

** Approximations: results will vary based on file size, resolution, compression, bit rate, content, host device, pre-loaded files and other factors. See www.sandisk.com.

Accessories & Services

A computer is a big investment, and now that you've taken the plunge, it's time to decide what you need to go along with your shiny new purchase. We've rounded up several of our favorite

must-have accessories for every computer owner. Whether you have a laptop or desktop, be sure to add these items to your shopping list to complete your computing experience. **FG**

KEYBOARD

- An ergonomic design can cut down on wrist strain associated with carpal tunnel syndrome
- Bluetooth connectivity lends itself to a tidy desk with one less wire to contend with
- A specialty model, such as a gaming or media keyboard, can add functionality to your pastime of choice

SURGE PROTECTOR

- Ensure the electrical current running to your desktop or laptop computer doesn't exceed proper levels
- Portable models will protect your laptop when you're on the go for work or play

CLEANING KIT

- Specially designed cleaners will keep your LCD or plasma computer screen clean without running the risk of scratching its surface
- Cloths are often made out of low-conductivity material in order to reduce static

USB HUB

- Offers an affordable way to connect all of your peripherals, even if you have more gadgets than USB ports
- Adds the convenience of easy USB access—no more reaching behind your computer to plug in your USB devices

EXTERNAL HARD DRIVE

- Protect precious video and photo memories with backups
- Keep your computer running more efficiently by saving large files, such as your media collection, on an external drive

MOUSE

- A wireless mouse will cut down on cable clutter at your desk while offering the convenience of portability for laptop use
- A gaming mouse can deliver better accuracy and speed for the ultimate in control
- Consider customizable buttons if you want to be able to access media, files, or programs with one-touch access

PRINTER

- A quality photo printer will eliminate trips to the drugstore for 4x6 prints and give you the ability to instantly share your photo memories
- An all-in-one model is the perfect addition for any busy family that needs a device that can operate as a copier, scanner, fax, and printer

WEB CAM

- Bridge the gap between long-distance family and friends with online video chatting by adding a Web cam to your setup

COMPUTING SERVICES

- To keep your desktop or laptop computer in tip-top shape, take advantage of the computing services offered at your local CE retailer. They can help you keep your machine running smoothly and free from the dangers that lurk online.
- Computer Setup & Networking
- Virus & Spyware Removal
- Data Backup & Recovery
- Hardware & Software Upgrades
- Training & Consultation

SanDisk slotRadio Cards

5,000 Songs At Your Fingertips



How many songs do you suppose radio stations keep in rotation in a given week? They probably don't have 1,000 songs in your favorite genres that are organized into a handful of playlists.

The slotRadio cards from SanDisk (\$49.99; www.sandisk.com) offer just such a listening experience. Instead of searching, buying, and downloading your favorite artists' music; organizing those tunes into playlists; and adding files to your digital music player, just pop in a slotRadio card, strap on your headphones, and away you go into music land.

Genres & Selection

You don't want to be limited in your listening selection, but you also don't want to spend time thinking about it. You're too busy with work, family, and hobbies to spend hours fiddling with a computer to find the music you enjoy.

SanDisk has five slotRadio cards to choose from in a variety of music genres: hip-hop/R&B, country, oldies, 80s & 90s, and rock. Each card has 1,000 pre-loaded songs that are conveniently



SanDisk slotRadio card • \$49.99 • www.slotradio.com

split into seven pre-programmed playlists, each featuring artists from the Billboard charts.

Any slotRadio card works in SanDisk's Sansa Fuze digital music player. By pairing a card with the Fuze, you can jam out all day long, or you can supplement the tunes by adding up to one album's worth of downloads, too. Just connect the Fuze to your computer via a USB cable, drag-and-drop your music files to the player, unplug the Fuze, and you can access your songs via the My Channel playlist.

Convenience

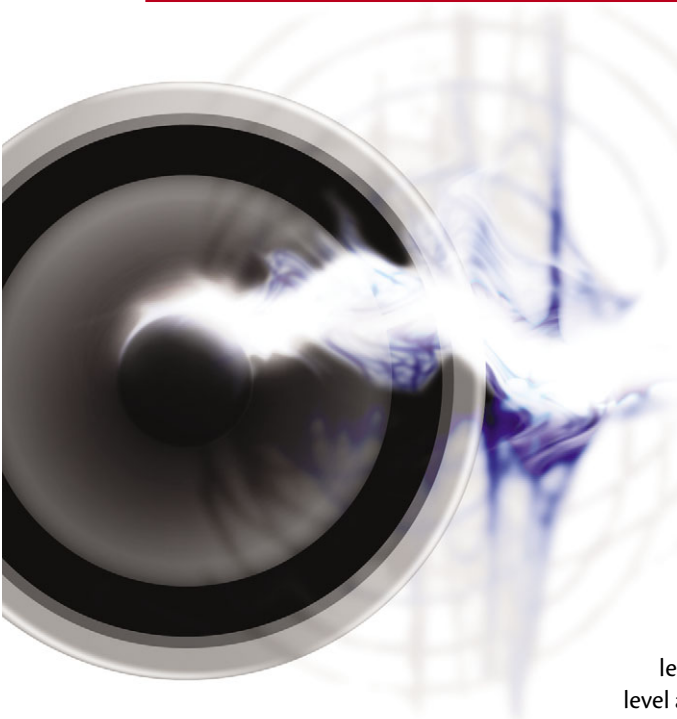
Using slotRadio cards to listen to music doesn't require downloads, software, or computer use—just pop a card into the player and enjoy. And with a large

selection of hits rolling in, it'll be like turning on your favorite radio station without listening to any commercials. Plus, unlike radio, if you're not in the mood for what's playing, you can just skip the current track.

Comparatively, the songs on a slotRadio card are incredibly inexpensive, too. For \$49.99 per card, you can't find a better deal for 1,000 of the most popular genre songs from any download service.

Great Music, Made Effortless

If you love music but want the simplicity of turning on the radio, slotRadio cards are for you. It requires nothing more than inserting a card and letting the music play. **FC**



How To Buy Car Speakers

Get The Right System For Your Vehicle

In our independence-oriented culture, we spend a significant amount of time driving wherever we please. So, it's not surprising that a car stereo is one of the most important accessories to drivers. If you're interested in buying your own set of car speakers, there are a few tips you should keep in mind when you want to upgrade your factory-installed car stereo system.

Highs & Lows

The chief decision-making factor in the selection of a speaker system should be based on your personal listening preferences. For instance, if you enjoy hearing bass-driven songs typically characteristic of rock or hip-hop, you'll want to make sure you install what's called a woofer (more commonly known as a sub-woofer) or a speaker that projects low-frequency noises.

Maybe you prefer listening to audio books while you're commuting to and from work. If this is the case, you'll want to focus on the quality of the tweeter speaker, a loudspeaker that produces sound at a crisp and clear (and higher)

level, best designed for speaking-level audio tracks.

It's also important to note built-in or external crossovers. Crossovers include a system of frequency filters that help reproduce and amplify a clean sound. This feature serves to separate woofer and tweeter audio frequencies, as well. Kenwood's 5-1/4-inch KFC-1682ie 3-way car speakers (\$69.99; www.kenwoodusa.com) feature built-in crossovers to enhance the soundscape inside your SUV.

Sensitivity & Power Handling

A quality set of car speakers will intensify your listening experience, whether you're playing your favorite orchestral music while taking a leisurely drive or a movie soundtrack that your children can't stop singing. Specifications such as speaker sensitivity and power handling will help you make an informed decision about what type of speakers are best for your car.

Speaker sensitivity is one feature to pay attention to when you're comparing the difference between audio systems. Speaker sensitivity measures how well a speaker converts power into volume. The higher the speaker rating (or decibel such as 88dB/W), the louder the speakers will amplify. Even a small

increase in the sensitivity rating can produce a fuller sound.

Always take into account how much power your speakers can support. Low-power systems won't overload what your speakers can manage; however, a high-powered system must have speakers that match its power-handling capabilities. You'll need to consider this feature whether you're purchasing a small set of speakers for your compact car or a large stereo system for your family vehicle.

Sound It Out

Remember that you're choosing a car audio system that best suits your driving sensibilities. Be sure to take into account the size, intensity, and power management capabilities of any speaker prior to purchasing the right car stereo. **FG**

BY JOANNA SAFFORD

Power Amps

If you desire better sound quality and a power upgrade for your speakers, a power amp is the perfect car audio accessory. This device will supply enough wattage in order to power an impressive subwoofer. ●

The Web As Your Driving Companion

GPS Units Become Internet-Ready



Wouldn't it be great to connect to the Internet with your GPS unit to get up-to-the-minute updates on traffic, weather, and pertinent travel information? Well, now you can, as some GPS units have Internet capabilities built-in.

How It Works

GPS units keep track of where you are on the road by comparing their location and distance to at least four different GPS satellites. Inside your GPS is a chip that receives the satellite signals to "figure out" your location and subsequently give you driving directions by comparing your position to a preloaded database of maps.

Connecting to the Internet, though, requires a GPS with a cellular modem, which allows the device to connect to the Internet via a cell phone service

provider's network. This powerful bit of technology makes Internet connectivity as ubiquitous as a cell phone signal. Thus, you can connect to the Internet almost anywhere and get updated information in real time.

How Internet Helps In The Car

Being able to connect to the Internet via your GPS device is a huge boon to drivers everywhere. How many times have you forgotten to update your maps, only to realize road construction has drastically altered your route?

With Internet on your GPS, you're better able to receive timely updates on everything from troublesome traffic flows to construction, instead of solely relying on your yearly or quarterly map updates. For example, TomTom (www.tomtom.com) users can upload notes about road changes to TomTom's Map Share community. You can connect

your GPS unit to your computer at home and get all the latest updates.

Some Internet-connected units let you send information to them from anywhere in the world via email. You can set up a special email address for the unit and send information to it, so if you have a Google Map you need to hang on to, just forward it to your GPS' email address, and you'll have it at the ready the next time you get into your car.

Internet-capable GPS units feature Google Local Search, a program that lets you search for local establishments, such as eateries, retail stores, or museums, via the Internet rather than your GPS' POI directory. This ensures you will get the most timely information you can. For example, you might be looking for a particular restaurant you've been wanting to try, but unbeknownst to you, it shut down a month ago. Rather than driving around for half an hour trying to find an address that no longer exists, Google Local Search will help you discover that the restaurant is out of business so you can find an alternate place to enjoy your dinner.

With all of the extra features of an Internet-connected GPS, staying the course just got a whole lot easier. **FG**

BY SETH COLANER

Get The Best Fuel Prices

If you're always on the hunt for the best fuel prices in town, your Internet-connected GPS will help you find it. Any GPS will help you find all the nearest gas stations, but a GPS unit that is connected wirelessly to the Internet can snag updated information to let you know which has the cheapest gas, as well. ●

Portable DVD Players

Invest In A Model For Your Lifestyle

Don't let your DVD collection be outshined by the Blu-ray Disc format—your DVDs still have a lot to give. Remember that portable DVD players have an entertainment value that's appropriate for many occasions, such as airplane flights (or layovers), family road trips, and downtime during business travels. Moreover, they incorporate a number of innovative features to improve mobility and usability. As you're browsing your options at your local CE retail store, keep the following shopping tips in mind.

Format Support

Portable DVD players can do more than play a standard DVD. A plethora of models can play CDs, MP3 music files, as well as video and picture CDs. Look for a player that can handle media formats such as DVD±R/RW, DVD-RAM, CD±R/RW, JPEG, WMA, and MP3. These features can turn a portable DVD player into a photo slideshow viewer

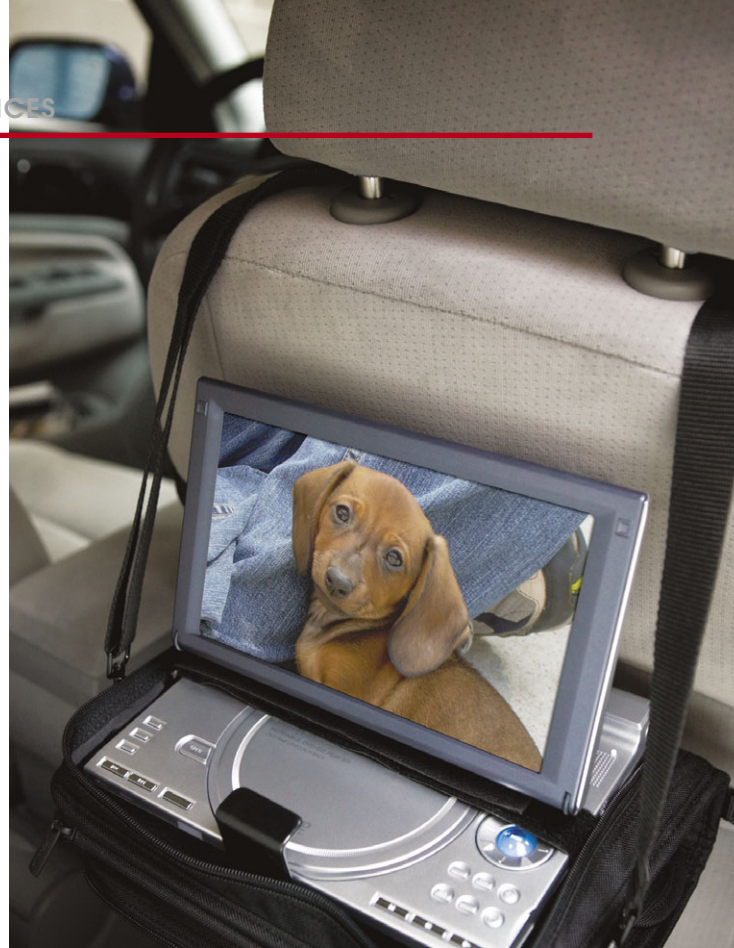
and home video player that you can take with you anywhere.

Outputs

As you search for the appropriate portable DVD player for your lifestyle, consider which device or accessory you want to connect to; a home-theater system, headphones, a portable power adapter, and an MP3 player are just some of the options. To output audio and video, purchase a portable DVD player with S-Video, Composite, coaxial, or optical out connectors, so you can enjoy quality videos and music when you connect the player to an HDTV.

Display & Interface Features

A widescreen display will enhance your viewing experience, especially if your favorite film is on a widescreen-formatted DVD. For instance, the Toshiba SDP93S Portable DVD player (\$179.99; www.toshiba.com) has a 9-inch widescreen



LCD with 800 x 480 video resolution (16:9 aspect ratio) for a mini cinematic experience. Some portable DVD player models feature monitors that both swivel and flip, letting you adjust your screen to watch movies no matter the location. You'll also find touch keys located on the player's bezel so you can quickly adjust the volume or menu settings.

Battery

Length of playback time is a significant feature, particularly if you plan to watch long movies or TV episode marathons or play hours of music on CD. Most models include built-in battery packs that keep your portable player juiced for close to six hours.

Go Portable

One of the benefits of using a portable DVD player is that you can enjoy DVDs while on the road or in the air, but when you return home, you can also connect the player to your personal electronic devices. **FG**

BY JOANNA SAFFORD

Dimensions & Weight

If the weight of your portable DVD player is important because you don't want it to weigh you down, be sure to factor that into your buying decision. Portable players are not heavy in general, but rechargeable battery packs can add weight to an otherwise lightweight player. In terms of screen size, options will range from 7 inches to more than 10 inches, which may add a little more or less to your load. ●

What Can An MP3 Player Store?

Find An MP3 Player Compatible With Your Needs

The biggest mistake you can make when buying an MP3 player is to get one that isn't compatible with the Web sites from which you want to download music files. It's also important to find out which other file formats—such as JPEG photo and H.264 video files—the player can support and where you can find them or how you can create them.

We'll help your shopping process by giving you an overview of the file types MP3 players support and explaining why players have such a range of storage capacities for different file types.

Audio Files

One common question shoppers have is whether an MP3 player can play the songs they have on CDs. Most portable music players can, as long as they work with a media application, such as Apple iTunes (www.apple.com) or Windows Media Player (www.microsoft.com), which converts a WAV file, a standard audio file commonly found on PCs and CDs. The media application compresses big WAVs into much smaller files, such as an MP3 or WMA.

An MP3 file is about 3MB, which is about one-tenth the size of a WAV file. WMA (Windows Media Audio) files are even smaller—about half the size of an MP3.

AAC is the primary format used by Apple products, including the iPod and iPhone. It's also the format of files you can buy from iTunes.

Other common audio file formats that are used include:

- ATRAC3 files are compatible with Sony MP3 players. (Sony MP3 players, however, are also able to play other file formats.)
- AIFF is the standard audio format for Mac computers.
- RA is the RealNetworks' audio format, and RAX is the Secure Real Audio format.
- OGG is an open-source codec, which means there is no licensing fee for downloading these files.

Photo Files

Digital cameras, the likely source of the photos you'll transfer to an MP3 player, save images in JPEG format. You'll want to make sure that the player you buy supports JPEG files if it has the ability to display photos.

Other image file formats include BMP, GIF, TIFF, and PNG, which are

commonly found in photo-editing and graphics applications.

Video Files

MP3 players that feature video playback work with one or more of the following video file formats:

- WMV is a compressed video format developed by Microsoft.
- H.264/MPEG-4/AVC is a standard for highly compressed video used for storing HD files.
- DivX, a video compression format created by DivX, supports HD videos. It's also supported by Windows Media Player.
- M4V is a file type based on MPEG-4 available from the Apple iTunes Store in the form of music videos, TV shows, and feature movies.

Compatible Sources

Once you determine which file formats the player supports, you need to identify the sources that can provide content in those formats. We'll focus on music sites because music is the primary reason people use MP3 players.

The following file types are either available from the service or ones you can use with the service's application in creating playlists and burning CDs.

- **iTunes.** The music you buy at iTunes is in the AAC or M4V formats. You may use the iTunes jukebox to convert WAV files found on CDs.
- **Rhapsody (www.rhapsody.com).** This site supports MP3, WMA, AAC, RA, and RAX formats.
- **Napster (www.napster.com).** Most tracks from Napster are in the WMA format.
- **Vorbis (www.vorbis.com).** If your player can play OGG files, then visit Vorbis to get a list of other sites that let you download free OGG music files.

Actual Capacity

You will have access to most, but not all, of the storage capacity of an MP3 player because a portion of it is needed for formatting and other data management functions.

Check out *First Glimpse's* MP3 Player Comparison Chart on page 71 to see how much you can store on a variety of available players.

Manufacturers base the number of files you can store on standards that depend on the file type. For example, some manufacturers estimate the number of songs you can store on their players based on 128Kbps in each WMA file. But MP3 files are larger than WMA files, so count on a lower number of songs if you load a player with MP3 files instead of (or in addition to) WMA files.

If the player can store photos and/or videos, the storage capacities will vary for each. The average size of a four-minute music file may be more than 3MB, but one JPEG file may be a fraction of that size—1MB or less. JPEG sizes also depend on the resolution and compression of the camera that captured the image.

Video file sizes range widely, again because of varying standards. Some manufacturers determine the video capacity of MP3 players in terms of *total hours* of videos they store as opposed to the *number* of video files.

Informed Expectations

The key to contentment with your MP3 player begins with realistic, informed expectations of what and how much it can store. Find out which file formats the device works with and then make sure those formats are compatible with the Web sites and devices you use the most. **PG**

BY RACHEL DEROWITSCH

GPS Devices

They're Not All The Same

Printing out maps and turn-by-turn directions from the Internet is so yesterday. Stopping to ask someone for directions? Even more outdated.

With GPS devices, you don't have to do either. Instead, you can tap in to maps, download Web-based updates, and receive optional real-time traffic services to get where you need to go.

GPS devices differ as widely as the vehicles and drivers they guide. Generally, they fall into three categories—handheld, portable, and in-dash—and they offer different features and form factors. We'll explain each type and point you to the one that best suits your lifestyle and travel needs. **FG**

BY RACHEL DEROWITSCH

▶ Handheld

- Compact and lightweight
- Loaded with detailed maps
- Rugged hardware
- Easy to use and take with you

Handhelds are generally smaller, lighter, and less expensive than the other two types of GPS devices. Some are designed to help you track your exercise regimen and monitor your heart rate. A few even strap around your wrist, making physical activities, such as biking or jogging, easier. Others double as PDAs.

Integrated Wi-Fi and Bluetooth capabilities enable you to easily download the most current maps and traffic information. On some models, if you input your destination, the device will figure out the most efficient way to go, guiding you with colored graphics and text and voice prompts.

Perfect For: Hikers, bikers, and drivers. Handheld devices are ideal for outdoor enthusiasts who also like to hit the road occasionally.

▶ Portable

- Car-mountable
- Easily moves from car to car
- Runs on vehicle and sometimes battery power
- Loaded with detailed maps

No matter where you need it, a portable GPS device will help get you to your destination. It's designed to run on a vehicle's power source, but if you want to take a spontaneous hiking trip, you can carry the battery-powered units with you, as well.

With larger touchscreens than handheld models, portable GPS devices can map out your directions in full color. Programmed points of interest, a trip calculator, antitheft system, and a rechargeable lithium-ion battery are other features to look for.

Perfect For: Trip-takers. Portable GPS devices are ideal for multicar families who want to switch the device among vehicles and possibly take it along on an outdoor excursion.

▶ In-Dash

- Large screen
- Multimedia functions
- Robust navigation features
- Pulls in strongest satellite signals

The maps and trip-calculating features of an in-dash GPS device are by far the most advanced of the three types. One thing to consider: You will probably need professional installation for an in-dash system.

These larger GPS devices come with more bells and whistles than smaller models. Some features to consider include Bluetooth compatibility, satellite radio, and integration with an MP3 player. With some in-dash models, you can also receive live weather and traffic updates.

Perfect For: Road warriors. Those who travel extensively and frequently visit new and unfamiliar places will definitely appreciate this device's large screen, powerful navigating capabilities, and entertainment options.



FirstGlimpse

Essential

THINGS TO KNOW

IN-DASH CAR STEREO DECKS

Q What is a car stereo deck?

A A car stereo deck is sort of the “brain” of your car’s audio system. It contains your radio; CD player; and in some cases, controls for other devices, such as LCD screens that are located in the back seats.

Q What do in-dash car stereo decks offer that my installed deck doesn’t?

A Aftermarket in-dash car stereo decks can offer many more features than the standard CD player/radio. For example, you can get models that will play DVDs, provide HD or satellite radio, and more.

Q I want to listen to my digital music player in my car. Is there a car stereo that lets me do that?

A Yes, many new car stereo decks have USB and auxiliary inputs built in that let you connect your digital music player directly to the stereo.

Q I like that I can use my digital music player with my car stereo, but is it possible to do away with the cables?

A Yes, it is. If the in-dash car stereo unit and your digital music player both support Bluetooth, you can stream music to your car stereo system wirelessly.

Q How do I know if a given in-dash car stereo deck is able to get satellite radio?

A Check the unit’s specifications. If it’s capable of receiving satellite radio, it will say so. Regardless, you also need a subscription to a satellite radio provider to receive it.

Q What’s HD Radio?

A Many in-dash car stereo units support HD Radio, which is clearer than typical radio and more akin to CD-quality audio. HD Radio requires no subscription and also delivers metadata such as artist names and song titles.

Q How do I know if a car stereo will fit my car’s dashboard?

A Car stereo decks come in two sizes: DIN or double DIN. The difference between the two is that double DIN is 2 inches taller than DIN (2 inches vs. 4 inches high).

Q Can I install a car stereo myself?

A Technically, yes, but it’s not an easy task, so you should seriously consider professional installation.

Q Can I get a car stereo with a touchscreen?

A Some car stereo decks have LCD touchscreens with graphical user interfaces rather than the typical buttons and monochrome screen.

Q I want to keep my eyes on the road when adjusting my car stereo. Is there any way to move the controls?

A Some in-dash car stereos have remote controls that can be mounted on the steering wheel, so you can control your car stereo without reaching over to the middle of the dashboard.





MP3 Player Glossary

W

ho doesn't want an MP3 player? It can help you relax, provide motivation, and ensure you always have a song to match your mood. When you head to your local CE retailer to snag one, make sure you have this glossary so you can choose the perfect model.

AAC—Short for Advanced Audio Coding, this format is a competitor of the more popular MP3 file format. It is the default program used by Apple.

Click Wheel—Apple's proprietary circular control on the front of the iPod.

Certified For Windows Vista—A Microsoft certification that ensures portable devices, such as MP3 players, and media, such as digital music and videos, are compatible with each other. This was once called PlaysForSure.

download—In terms of digital music, downloading is when you retrieve a song from an Internet site or another network connection and save it to your computer or digital music player. You can download songs from music Web sites such as iTunes, Napster, or Rhapsody.

DRM (digital rights management)—A security mechanism for digital media, associated with copyright. A common DRM scheme for digital music involves getting a license file to authorize playback of a free or purchased song.

earbuds—Small, circular devices you put into your ears so you can listen to

music on your DAP. These serve the same function as headphones. Many music players come with their own earbuds, but you can purchase a separate pair that are more comfortable or of better quality.

flash memory—Solid-state memory with no moving parts that is lightweight and small. In terms of digital music players, a flash-based player is lighter and smaller than a hard drive-based player, and it also won't skip. Thus, flash-based players are popular for use during exercise. However, the capacity of a flash drive isn't as large as a hard drive-based player.

FM tuner—If your music player has a built-in FM tuner, you will be able to listen to music from local radio stations.

hard drive—Storage in which rigid platters are inside a fixed casing. In terms of digital music players, a hard drive-based player is larger and heavier than a flash-based player. Because of the moving parts (the platters), hard drive-based players are also prone to skipping. However, the capacities are much larger than flash-drive capacities.

iTunes—An application that loads onto your computer and lets you play, organize, and download and purchase music, videos, podcasts, and television shows for your portable media player or computer.

MP3—Perhaps the most popular digital audio encoding format. It compresses audio to about one-twelfth the original size while still providing excellent sound. In general, a 1MB MP3 file will last about one minute.

playlist—A queue of songs a user creates to play on a computer, burn to a CD, or transfer to an MP3 player. The playlist includes only directions to the location of the songs, not the songs themselves.

podcast—A downloadable episode that is similar to a radio program. A user can subscribe to a podcast for updated episodes, or she can download podcasts one at a time.

screen—The display on the front of a portable music player. A player's screen can either display in color or black and white.

WMA—Windows Media Audio is a digital audio format created by Microsoft.

widescreen—A screen with a 16:9 aspect ratio.

Which MP3 Player Is Best For You?

Pods are cool, sure, but you have other choices when it comes to listening to your tunes. This chart compares the most important—and coolest—features from select MP3 players.

		Memory type	Capacities	Songs	Video; FM tuner capabilities	Colors	Battery life
What It Means		Hard drive (moving parts, more capacity) or flash (no moving parts)	How much memory the player has (on models available at Best Buy)	Based on four-minute songs at 128Kbps, the number a player can hold	Some MP3 players can play video or let you listen to radio stations	Several players offer a variety of color choices	How long the battery will last when playing music
	Sony Walkman MSRP: \$29.99* SKU 9080148	Flash	2GB	475	No; Yes	Black, pink, red	14 hours
	SanDisk Sansa Clip MSRP: \$49.99* SKU 8605636	Flash	2GB	500	No; Yes	Black, pink, red, blue	15 hours
	SanDisk Sansa Fuze MSRP: \$69.99*; \$79.99*; \$99.99* SKU 8753752	Flash	2GB; 4GB; 8GB	500; 1,000; 2,000	Both	Black, blue, pink, red	24 hours
	Apple iPod nano MSRP: \$149*; \$199* SKU 8771867	Flash	8GB; 16GB	2,000; 4,000	Yes; No	Silver, yellow, black, blue, pink, purple, orange, green	24 hours
	Samsung P2 MSRP: \$169.99* SKU 8627462	Flash	4GB	1,000	Both	Red	30 hours
	Apple iPod touch MSRP: \$229*; \$299*; \$399* SKU 8772063	Flash	8GB; 16GB; 32GB	1,750; 3,500; 7,000 (AAC)	Yes; No	Black	36 hours
	Microsoft Zune MSRP: \$249.99* SKU 9192991	Hard drive	120GB	30,000	Both	Black, red	30 hours
	Sony X Series Walkman MSRP: \$299.99*; \$399.99* SKU 9341312	Flash	16GB; 32	N/A	Both	Black	33 hours

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Which GPS Device Is Right For You?

One of the hottest CE devices around right now is a GPS, and what a useful device it is, too. Here, we compare some models available on today's market. All of these units come with maps already loaded, and you can purchase additional maps, as well.

		Screen size; Dimensions	Text-to- speech; Traffic receiver	Preloaded maps	WAAS	Bluetooth; MP3 play- back	Included charging adapters
	What It Means	The diagonal measurement of the screen; height x width x depth	Unit calls out specific street names; unit receives traffic updates and re-routes accordingly	The regional maps that come included with the GPS unit	A satellite and ground station system that gives exceptional GPS accuracy	Some units communicate wirelessly with other Bluetooth devices or play MP3s	AC adapters plug into the wall; DC adapters plug into your car's cigarette lighter
	TomTom ONE 130 MSRP: \$129.95* SKU 8774463	3.5 inches; 3.8x3.2x1 inches	No; No	Entire U.S. (including Puerto Rico) and Canada	No	No; No	DC adapter
	Nextar 43LT MSRP: \$129.99* SKU 9301052	4.3 inches; 3x3.9x0.8 inches	Yes; Yes	Entire U.S.	No	No; Yes	DC adapter
	Garmin nüvi 205 MSRP: \$159.99* SKU 9299671	3.5 inches; 2.9x3.9x0.8 inches	No; No	Entire U.S. (including Puerto Rico) and Canada	No	No; No	DC adapter
	Magellan Roadmate 1212 MSRP: \$169.99* SKU 8882845	3.5 inches; 3.3x3.6x0.7 inches	Yes; Yes	Entire U.S. (including Puerto Rico) and Canada	Yes	No; No	DC adapter
	LG LN740 MSRP: \$249.99* SKU 8440868	4 inches; 3.5x4.5x0.7 inches	Yes; Yes	Entire U.S. (including Puerto Rico) and Canada	No	No; Yes	DC adapter; AC adapter
	Insignia NS-CNV20 MSRP: \$349.99* SKU 8947312	4.3 inches; 3.2x4x0.9 inches	Yes; Yes	Entire U.S. (including Puerto Rico)	Yes	Yes; No	DC adapter; AC adapter
	TomTom GO 740 LIVE MSRP: \$399.95* SKU 9263281	4.3 inches; 3.4x5x0.9 inches	Yes; Yes	Entire U.S. (including Puerto Rico) and Canada	No	Yes; No	DC adapter
	Garmin nüvi 1490T MSRP: \$499.99* SKU 9333125	5 inches; 3.4x5.4x0.6 inches	Yes; Yes	Entire U.S. (including Puerto Rico) and Canada	No	Yes; No	DC adapter

*Prices listed in this issue are for general reference and may vary from retailer pricing.

Accessories & Services

No matter where you go, a wireless device can add enjoyment to your journey. Cell phones help you keep in touch with loved ones when you're traveling for business, while a GPS device can help you find your way if you're lost or want to find the local hot spots during a vacation. And,

of course, your MP3 player can provide the soundtrack for wherever you're headed. To make sure you are taking full advantage of the capabilities your wireless devices offer, check your local CE retailer for accessories that can enhance your mobile experiences. We've listed our favorites below. **FC**

MP3 PLAYER CASES

- Protect your MP3 player from bumps and scratches
- Quickly access your player's functions with a clip
- Keep your player out of your way with an armband

MP3 PLAYER DOCKS & SPEAKERS

- Invest in portable speakers to play the music on your MP3 player for a group; some include radios and can also play CDs
- Recharge your player's battery with a portable dock as you continue listening to music
- Play your music through car speakers using an FM transmitter

MP3 PLAYER EARPHONES

- Match earphones to your needs: If you don't want anything bulky, opt for earbuds that fit inside your ear; to hear every musical detail, try headphones that cover the ear completely
- Listen to your music without the interference of background noise with earphones that offer a noise-canceling feature

CELL PHONE CHARGERS & BATTERIES

- Keep your phone charged no matter where you are; adapters for your cell phone let you use solar power, your car's DC outlet, wall power, or your computer to charge your phone
- Be prepared for emergencies with extra cell phone batteries

CELL PHONE HEADSETS

- Keep your hands free while still being able to use your phone
- Link compatible cell phones to a Bluetooth headset to make or take calls without a tangled mess of cable
- Don't miss any of your conversation by using a headset that offers noise-canceling capabilities

CELL PHONE CASES

- Safeguard your phone from wear and tear with a case
- Universal cases fit most sizes of cell phones; some of these will include clips and wrist straps for portability and accessibility
- Fitted cases specifically fit your phone's model type; these can be hard acrylic casings, rubber sleeves, or leather pouches
- Avoid scratches and fingerprints with stick-on or hard clear screen protectors on your phone's screen

GPS MOUNTS

- Put your GPS within hand's reach with a mount
- Mounts can be placed on a car dash or stuck to a windshield
- GPS mounts are also available for golf carts or bicycles

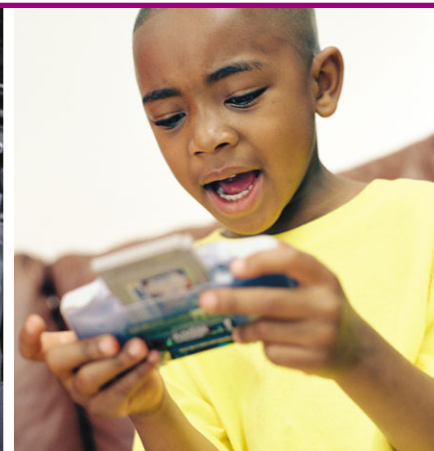
GPS CHARGERS

- Make sure your travel companion always has a full battery
- If you do run out of battery, charge your GPS with an adapter; these can plug into a wall, PC, or car's DC outlet

MOBILE SERVICES

Whether your wireless device is brand-new or nearing the end of its life span, your local CE retailer offers services to help you take care of all of your wireless device's needs.

- Protection plans for GPSes, MP3 players, and cell phones
- Phone and battery recycling
- GPS setup and deck installation
- MP3 vehicle integration
- MP3 player setup and training
- Cell phone repair services and loaner phones



Kids Electronics

Buying Tips For Child-Centric Devices

Kids today are inundated with electronics, be it a microchip that lets a doll speak in a sweet voice or graphics card that helps a teenager play World of Warcraft. Beyond entertaining, though, electronics can also help foster creativity, learning skills, and decision-making abilities. Consider the following tips when shopping for kids electronics.

Remember Who You're Dealing With

Children today are tech-savvy. Need proof? Ask any parent who has enlisted his daughter's help to transfer digital images to a PC. Students start using technology early on in school, and they're expected to. Thus, don't underestimate a child's ability to quickly get comfortable using electronics. The scores of youngsters who can start a DVD movie or gaming console, navigate the Web, and program DVR recordings are evidence.

Conversely, knowing your child's interests and skill level will help avoid frustration. If your first grader shows an interest in digital photography, for example, don't kill

the learning tree by buying an intimidating, overwhelming D-SLR that will turn her off. Start with a point-and-shoot model that covers the basics but leaves room to grow. This approach will also keep you from overspending. Rather than buying a fully featured notebook to complete schoolwork, for example, an inexpensive netbook running a free office productivity suite can save you hundreds.

Fear & Fear Not

Some parents are wary of video games for good reason. Still, many nonviolent games possess educational value and other benefits. Preschool-aged systems, such as Leapfrog Leapster (\$49.99; www.leapfrog.com), interactively teach about numbers, foreign languages and cultures, the ABCs, etc. Properly

supervised, even games such as Mario Kart (\$49.99 for Nintendo Wii; www.wii.com) can develop hand-eye coordination, while the Wii Fit system (\$89.99) can get your child off the couch and into motion. Further, such games are great gateways for one-on-one time. If you're unsure of a specific game's appropriateness, check its ESRB (Entertainment Software Rating Board; www.esrb.org) rating. You can find all of the ESRB rating descriptions on page 80.

Matchmaker, Make Me A Match

The closer you can match an electronic device to a child's personality the better. If your child's favorite hue is blue, buy a blue MP3 player. If he's a roughneck, protect your investment with a case. If she's adventurous, consider a waterproof digital camera. If she's creative, consider an inexpensive camcorder to film movies starring her friends. If he's a poor speller, give him an electronic dictionary. If she's forgetful, a noncontract cell phone will let you inform her it's time to come home. **EG**

BY BLAINE FLAMIG

The Ying & Yang Of Electronics

A Web cam can help a grandchild stay in touch with long-distance grandparents, but it can also be an unwanted distraction to video chat for hours with friends. A notebook can help a struggling student improve his school work—if he doesn't spend hours playing games. When buying electronics for kids, remember that for all the positives, there's potential for misuse. The key is considering all angles, positive and negative, the electronic device poses and plan ahead. ●



Get Your Game On

Geek Squad Gets You Playing In No Time

When you purchase a new game console, it's easy to get carried away with thoughts of glossy sports cars drifting through wide turns in a rain-slick cityscape, grittily realistic combat in a World War II shooter, or cartoon boxing matches in which the whole family cheers you on with every hook and uppercut. But before you can even catch a glimpse of those graphics, you have to set the thing up. And that's when reality sets in; getting a modern gaming console to work with your home theater and network is no fun at all. That's where Geek Squad and its In Home Gaming Set Up & Networking service come in.

Get Gaming Faster

Don't let their sleek exteriors fool you: Gaming consoles are as complicated as

PCs in many ways, and getting the most out of them is no quick-and-easy feat. But with the In Home Gaming Set Up & Networking service (\$129.99; www.geek-squad.com), Geek Squad integrates the console with your home theater and your network, demonstrates the system's capabilities, and gets you online. Geek Squad can also configure parental controls.

House Call

Upon arriving at your residence, a Geek Squad Agent begins by plugging in the gaming console's audio, video, and power cables to their ports and outlets in your home theater. This portion of the setup also entails configuring the gaming console to work with your network, if you have networking hardware already in place. To really take your console experience to the next level, Agents can configure the console to share music, video, and photo content with your existing PC

or Mac, if your computer has media-sharing capabilities.

Geek Squad also helps you with the software aspects of your new console. The Agent makes sure the console's core software (or operating system) is updated and has all of the features enabled. He creates user accounts for anyone using the system and enables parental controls as desired. Parental controls can be used to block movies' or games' content based on MPAA (Motion Picture Association of America) or ESRB (Entertainment Software Rating Board) ratings.

Finally, the Agent's job isn't complete until he has demonstrated how to use the console and you feel comfortable navigating the menus and settings on your own. Now all that's left to do is get your game on. **EG**

BY ANDREW LEIBMAN

BD vs. DVD Media

Making Sense Of It All



It's like walking through a candy shop. When you're meandering down the DVD aisle at an electronics store, new must-sees and old favorites catch your eye. From Hollywood to Bollywood, Academy Award winners to potboilers, there's something for your every mood.

But wait—it's not really the DVD aisle anymore, is it? Now that BD (Blu-ray Disc) is coming on strong, you might have two choices instead of just one when you're in the mood to buy a movie. It's like the old days of Betamax vs. VHS; only this time, the superior technology just might become the new standard.

The superior technology in this case is BD. With a video resolution (number of pixels, or picture elements) six times as great as DVD's on a plastic disc of the same size, BD naturally has a sharper picture. In fact, its 1080p (1,920 x 1,080 pixels, progressively scanned) resolution natively fits the pixel counts of the best HDTVs on the market today, unlike

DVD's 720 x 480 video. What's more, BD can provide more lifelike colors and audio than DVD.

On the other hand, DVD is still wildly popular even more than 12 years after its introduction. There are still a few films and TV programs you can't find in this inexpensive format, but not many that you've heard of. Comparatively, BD's list of available movies is still relatively small, although it's growing respectably.

You can easily find DVD players for as little as \$32, or about \$60 for a deck that can upconvert the format's 480p (720 x 480) video to fit an HDTV screen. However, a DVD player can't play BDs.

Virtually all BD players, however, can play both Blu-ray Discs and DVDs, the latter with upconversion. This backward-compatibility with DVD has turned out to be a major selling point: When shoppers need a new DVD player, they often consider buying a BD player instead, even if they don't plan to start replacing their DVD collections just yet. It helps that the prices of BD players have come down

quite a bit recently, with entry-level models selling for about \$200.

Movie prices are different, as well. BDs generally cost about \$20 to \$40, while the majority of DVDs retail for approximately \$10 to \$25. BD buyers are willing to pay more for the new format because of its stellar detail and sound as well as for special features such as BD-Live (BD Profile 2.0) online interactivity and additional content downloads.

Still, upconverted DVDs can look very good on a top-notch HDTV when played in a respectable upconverting player. In fact, when a blockbuster has been lovingly transferred to DVD at a very high level of quality, its picture can seem almost as good as BD.

Conversely, DVDs of lesser-known films often suffer from poor picture quality because they've been compressed to fit on a cheaper single-layer disc. There's no such gamble with BD; in comparison to DVD, the format looks fantastic. **FG**

BY MARTY SEMS

Portable Gaming Devices

Do More Than Just Play Games

W

hen you're stuck in the car on a long road trip, at the airport with an overdue flight, or at the mall while your sister

tries on clothes, a portable gaming device can help keep you entertained with more than just games. You'll find portable consoles with special features, such as head-to-head gaming with other players and the ability to make phone calls. To narrow down the search to find the right portable gaming console, here are some highlights on what these devices offer.

Features Galore

Touchscreens are just one of many features that can be found on select handheld gaming devices. Touchscreens are ultra-interactive surfaces that enable you to touch, tap, and draw on the screen for menu selections and gameplay using a stylus or your finger. The touchscreen



doesn't stop there; some games allow you to move characters or draw pictures in order to advance in the game.

Wi-Fi capabilities are also now offered on most portable consoles and can help enhance your gaming experience. With Wi-Fi, you may be able to connect with other portable console players for game competition or interact during gameplay with someone on the other side of the world. Often, that same Wi-Fi capability will enable you to browse the Internet or talk to your friends via an Internet phone service.

An available memory card slot will increase your portable game console's existing storage. With this feature, you can save valuable information from your gaming adventures and view photos and video. A memory card slot will also give you the opportunity to use your photos as wallpaper, view a slideshow, or send

videos to friends and family via the console's Wi-Fi connection.

To add a new dynamic to the way you play games, look for a built-in microphone. Certain games may have you blow into the mic to open a secret passageway or say a word to complete a task.

For movie buffs, you can purchase special media called UMDs for the Sony PlayStation Portable (\$169.99; www.sony.com) to watch flicks even when you can't connect to the Internet.

Entertainment To Go

A portable gaming device offers plenty to keep you busy, whether you want to play an interactive game, watch your favorite show, or share your photo collection. **FC**


BY KRIS GLASER

Smartphone Gaming

If you want to take your portable gaming to a new level, look to your smartphone, which probably includes a few games already that can be found by browsing your phone's program menu. But when it's time for a new challenge, you can purchase a special memory card that's preloaded with your favorite games, such as sudoku or chess. Smartphone game cards cost between \$20 and \$40 but also offer additional storage space for photos or music. ●

Which Gaming System Is Best For You?

Game consoles and portable devices are no longer limited to gameplay. They can also access the Internet, download media, and play your favorite DVDs or CDs. To help you find a gaming device that will suit you well, here's a comparison of the most popular selections you can find at your local CE retailer.

		Hard drive size	Compatible memory cards	Optical drive	Video resolution output	Ports
What It Means		How much data the system can hold	Cards that will let you save and off-load data, such as game saves or personal media	Aside from game discs, other playable media formats	Highest number of video pixels that are sent to a TV or portable console screen	Hookups for controllers as well as video and audio output
Console Devices	 Sony PlayStation 3 (80GB) MSRP: \$399.99* SKU 8982988	80GB 2.5-inch Serial ATA	PlayStation and PlayStation 2 cards with USB memory card adapter (not included)	CD-RW/ DVD±RW/ BD	1,920 x 1,080	1 Ethernet, 1 A/V, 1 Optical digital audio, 2 USB, 1 HDMI
	 Sony PlayStation 2 MSRP: \$129.99* SKU 7266638	N/A; uses two memory card slots to save game data	PlayStation Memory Card (8MB)	CD-RW/ DVD±RW	1,280 x 1,024	2 controller, 2 USB, 1 Ethernet, 1 A/V Multi-out, 1 Optical Digital out, 1 FireWire
	 Nintendo Wii MSRP: \$249.99* SKU 8008559	512MB	SD/Nintendo GameCube Memory Card	Can only play game titles	720 x 480	4 controller, 1 Component, 1 Composite, 1 S-Video, 2 USB
	 Microsoft Xbox 360 Elite MSRP: \$399.99* SKU 8301492	120GB	Xbox 360 Memory Unit	CD-RW/ DVD±RW	1,920 x 1,080	1 A/V cable, 3 USB, 1 Ethernet, 1 HDMI, 4 controller
Portable Devices	 Nintendo DSi MSRP: \$169.99* SKU 9249725 (blue)	256MB	SD	None	Dual 256 x 192	1 headphone, 1 microphone
	 Nintendo DS Lite MSRP: \$129.99* SKU 8566312	None	None	None	Dual 256 x 192	1 headphone, 1 microphone
	 Sony PlayStation Portable 3000 MSRP: \$169.99* SKU 9175082	None	Memory Stick Duo	UMD (Universal Media Disc)	480 x 272	1 video out/ headset connector, 1 USB, 1 DC out

*Prices listed in this issue are for general reference and may vary from retailer pricing.

	Online community	Wi-Fi access; Media streaming	Parental controls	Compatible game formats	Included accessories & services	Available accessories	Controllers	Perfect for
	Web site membership for downloads, upgrades, and more	Access the Internet without a cable hookup; Send and receive media wirelessly	Helps parents decide what content their kids can or cannot access	Game titles that can be played on the game system	Accessories included with the console	Extras that can help enhance your gaming enjoyment	Included controllers; wired/wireless controller compatibility	Who can benefit from the special features the gaming system offers
	Yes, free PlayStation Network membership	Yes, 802.11b/g; Yes	Options available for PS3 games on PS Network, DVDs, BDs, and Internet	Sony PlayStation 3 titles and select PlayStation titles	DualShock 3 wireless controller, USB cable, video rental through PlayStation Network	Blu-ray Disc remote, Bluetooth headsets, memory card adapter	Includes 1 DualShock 3 wireless controller; Both	Anyone on a budget who wants the full Internet gaming experience with an integrated DVD player
	Yes, free PlayStation Network membership	No, only a wired Internet connection included; No	Options available for DVDs	Sony PlayStation and PlayStation 2 titles	DualShock 2 analog controller	Cordless controllers, memory cards, Rock Band and Guitar Hero controllers	Includes 1 DualShock 2 analog controller; Both	Anyone on a budget who wants the full Internet gaming experience with an integrated DVD player
	Yes, various paid and free Wii Channels are available	Yes, 802.11b/g; Yes	Options available for Wii titles, online interaction, downloads, user-created content, and more	Nintendo GameCube and Wii titles	Wii Sports, Wii remote, Wii nunchuck, sensor bar, console stand	Nunchuck, wireless Wiimote, wheel, and classic (wired) controllers; wireless sensor bar	Includes 1 wireless Wii remote and nunchuck; Both (some titles require a wired remote)	Gamers of any age who want a unique wireless gaming experience that requires little gaming knowledge
	Yes, free Xbox Live Silver membership with one month free Xbox Live Gold	Only a wired Internet connection is included (wireless networking adapter available); Yes	Options available for Xbox titles, DVDs, and Xbox LIVE interaction	Microsoft Xbox and Xbox 360 titles	Wireless controller, wired headset, two blockbuster games, Netflix subscription trial	Wireless headset, hard drive, wired and wireless controllers, wireless networking adapter	Includes 1 wireless controller; Both	Those who want to play games in true HD with full theatrical sound and plenty of hard drive space
	DSiWare (DSi online store)	Yes, 802.11; Yes	Available for Nintendo DSi content	Nintendo DSi and Nintendo DS titles	AC adapter, 2 styli	Audio headset, battery power pack, screen protectors, carrying cases, styli	N/A	Users who want a handheld gaming system that lets them take, personalize, and share photos, too
	Yes, free Nintendo Wi-Fi connection	Yes, 802.11b; No	No	Nintendo DS and Game Boy Advance titles	AC adapter, cartridge slot cover, stylus	Cases, AC adapter, headphones with microphone, styli, cartridge case	N/A	Anyone who will appreciate the uniqueness of dual touchscreens and voice-control gaming
	Yes, free PlayStation Network membership	Yes, 802.11b; No	Options available for UMDs, Internet, and video downloads	PlayStation Portable titles	AC adapter, AC power cord, battery pack, video rental through PlayStation Network	Battery charger, travel case, media manager software, A/V cable, AC adapter	N/A	Media buffs who want to enjoy movies, photos, and music when they're on the go

ESRB Game Ratings & Descriptions

Find Material That's Appropriate For Your Kids

ESRB (Entertainment Software Rating Board) Ratings

In order for parents to select gaming software appropriate for their children, ESRB (www.esrb.org) ratings are listed on the front and back of most game packages to provide concise and impartial details about a title's content.



Early Childhood. Titles with this rating have content that may be suitable for children ages three and older. These software titles contain no material that parents would find inappropriate.



Everyone. Titles with this rating have content that may be suitable for children ages six and older. Games in this category may contain minimal cartoon, fantasy, or mild violence and infrequent use of mild language.



Everyone 10+. Titles with this rating have content that may be suitable for children ages 10 and older. Games in this category may contain more cartoon, fantasy, or mild violence and language as well as minimal suggestive themes.



Teen. Titles with this rating have content that may be suitable for children ages 13 and older. Titles in this category may contain violence, suggestive themes, crude humor, minimal blood, simulated gambling, or infrequent use of strong language.



Mature. Titles with this rating have content that may be suitable for persons ages 17 and older. Games in this category may contain intense violence, blood and gore, sexual content, or strong language.



Adults Only. Titles with this rating have content that is only suitable for persons 18 years and older. Games in this category may include prolonged scenes of intense violence, graphic sexual content, or nudity.

For additional information, ESRB ratings on the back of game packages include content descriptions and depictions.



Gaming Tips For Parents

Aside from checking a game's ESRB ratings, there are other ways you can ensure the games your youngsters are playing are age-appropriate.

- Carefully look at everything on a title's packaging, including the game graphics.
- Find game reviews, screen shots, or demos to get a better idea of a game's content.
- If available, use the game's parental controls to restrict inappropriate content.
- Learn about games by talking to other parents and older children who are familiar with or have played certain titles.
- Participate in your children's gaming and discuss their games as much as possible.
- Be aware of nonrated ESRB material a game may contain. "Mods" are program downloads that can alter a game's content, and online games often have live player chats as well as other user-generated content.

Accessories & Services

The gaming experience goes beyond the game itself—you need the right console peripherals and the best just-in-case services. We've compiled a list

of some of the must-have accessories that will only enhance your gameplay, so be sure to remember these items for the next trip to your local CE retailer. **FC**

HEADSETS

- Use a hands-free headset to enhance your gaming experience by planning strategies aloud with your team
- A Bluetooth 2.0 headset is designed to communicate with your gaming console; Bluetooth headsets will be compatible with most game consoles
- Consider noise-canceling headsets with echo-minimizing microphones so you can hear and be heard clearly

WIRELESS PLAY-AND-CHARGE KIT

- Enjoy continuous gameplay as your controller recharges wirelessly, without the hassle of cords
- Look for a play-and-charge kit that includes a power-gauge dashboard so you can keep track of your controller's battery status

USB DEVICES

- A USB media hub featuring a memory card reader will let you connect other USB devices (MP3 players, portable gaming devices, etc.) to your game console
- Use a USB rechargeable battery pack to charge the Li-Ion battery for guitar controllers

WIRELESS CONTROLLER

- Bluetooth technology lets you play while also having the freedom to move around
- Some controllers use traditional AAA batteries to sustain your playing time
- Find the best design for your grip: ergonomic or traditional

GAMING KEYBOARD

- Adding a keyboard can help game efficiency—type in text codes and chat with other players quickly
- Look for a model with a touchpad so you can easily scroll around the game display

MUSIC CONTROLLER ACCESSORIES

- Add a heavy-duty bass pedal to your gaming drum set to replace your standard pedal
- A tripod microphone stand will make your song-based games more true-to-life
- Extra cymbals for your rock drum kit will give you more freedom to express musical ability

EXTERNAL MEMORY

- External hard drives, USB drives, or memory cards back up your in-progress games
- When additional memory is connected to live (online) games, you can save gaming content and downloads
- The more memory you have, the more games and downloads you'll be able to store

RACING WHEELS

- A gaming steering wheel puts the virtual racing experience directly in your hands
- A comfortable, accurate wheel should give you more control with turns, braking, and acceleration
- Be sure to purchase a racing wheel that's compatible with your particular gaming console

GAMING SERVICES

Your local CE retailer provides some helpful services, both in-home and in-store, to enhance your gaming console. Specifically, the professionals can set up online connections, install system updates, and transfer data to a gaming storage device.

- Online account configuration
- Console system updates
- Stream media from a PC to a gaming console
- Connect a console to a home-theater center

INTERNET-CONNECTED BD PLAYERS



nce again, there's nothing good on TV. Luckily, with the multimedia possibilities an Internet-connected BD (Blu-ray Disc) player can deliver, you can always grab a bag of popcorn, plop down on your sofa, and find something enjoyable to watch.

When coupled with BDs, BD players have the ability to play premium audio and video on your HDTV. These devices can also boost the quality of your standard-definition DVD collection to 1080p with their upconverting capabilities. And unlike their disc predecessor, Blu-ray Discs have a larger amount of storage space and are packed with exclusive content such as deleted scenes and movie commentaries from actors and directors. Your media choices don't end there. Adding an Internet-connected BD player to your home-theater setup will bring even more entertainment possibilities, such as Web-streamed movies, TV shows, radio, and videos, to the table.

Make The Connection

BD players are available with wired or wireless networking capabilities (and sometimes players will include both). A BD player with a wired Internet connection requires an Ethernet cable

connection from an Internet router to the device itself. Conversely, BD players with wireless capabilities don't need to be tethered to an Ethernet port because they connect to the Internet via Wi-Fi.

Catch It Live

Rather than making a quick run to pick up a video rental or waiting by your mailbox for the next title in your Netflix queue, many Web-enabled BD players will stream movies and TV shows from subscriber services. Some models currently offer access to Netflix (www.netflix.com), giving you instant access to more than 12,000 movies and TV shows available for Web streaming. With this, you won't have to leave the comfort of your living room to catch the latest flicks.

Additionally, there are BD players that will offer access to Internet radio services, such as Pandora (www.pandora.com). With this feature, audiophiles can enjoy music from customized radio stations as they're entertaining friends or cleaning the house. You can also view uploaded videos from Web sites, such as YouTube (www.youtube.com), by accessing content via a BD player menu option.

Internet-enabled BD players will also unlock the bonus content offered on Blu-ray Discs with the BD-Live feature. Additional media, such as alternative

movie endings, ringtones, and bonus scenes, can be downloaded for enjoyment. While some units will include internal memory for storing these types of files, other BD players support external memory devices, such as a memory card or USB flash drive. Aside from downloads, select BD-Live discs will let you view new or updated movie trailers that are only available on the Web and give you the opportunity to purchase goods that appear in a disc's program.

Stay Updated

A BD player with Internet access has the ability to receive firmware updates, and this will ensure your device is constantly up-to-date. Continuous firmware upgrades will fix bugs that plague a BD player's software or add new features. For example, a BD player update can add support for new technologies, such as audio decoding, or support for new formats and files. Overall, having Internet access to these firmware updates will let you experience better playback from your disc player.

With the added entertainment, a Web-enabled BD player can provide exclusive access to new and updated movie or TV program content. And with direct access to firmware updates, you're sure to enjoy a connected BD player for years to come. **FC**

Family fun time

Now that school's back in session, the kids are busier than ever with homework and after-school activities. That doesn't mean you can't find innovative ways to bring the family together to spend some quality time. With a gadget or two from your local CE retailer, you can start making some special memories that will be cherished for years to come.



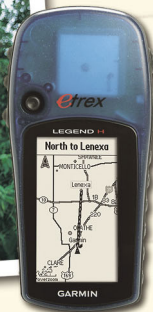
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The Interactive DVD Game**

Entertain your youngsters
with an old classic.
\$24.99



**Mario & Sonic
at the Olympic
Games (Wii)**

Encourage a little bit of
friendly competition.
\$49.99



winner!

camping

**Cobra microTALK
18-mile FRS/GMRS
2-Way Radio**

Alert the troops when
it's time for dinner at
the campsite.
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**Canon VIXIA HF20
High-definition
Digital Camcorder**

Capture fun family
memories to
watch later.
\$899.99



celebrate



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